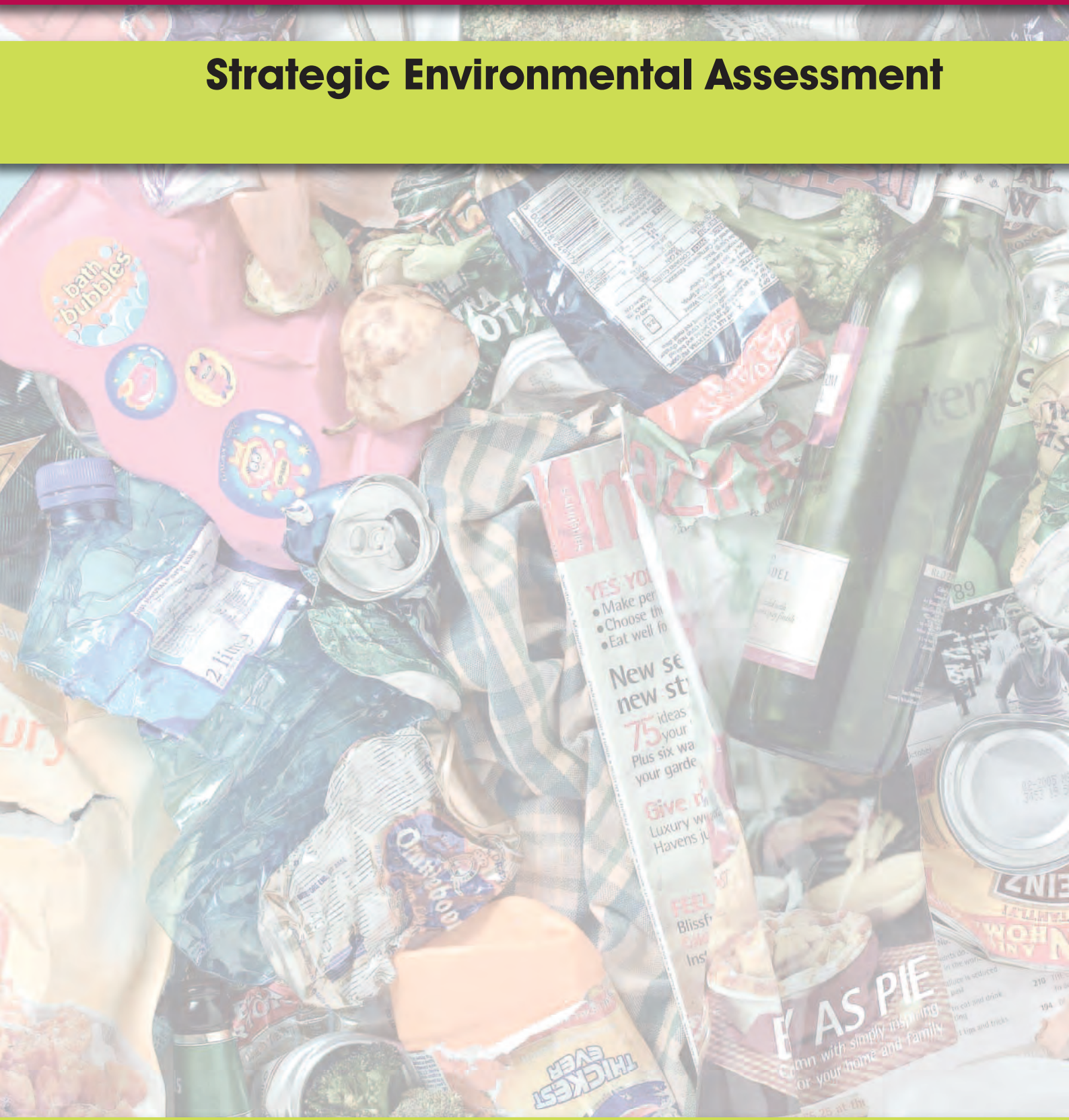
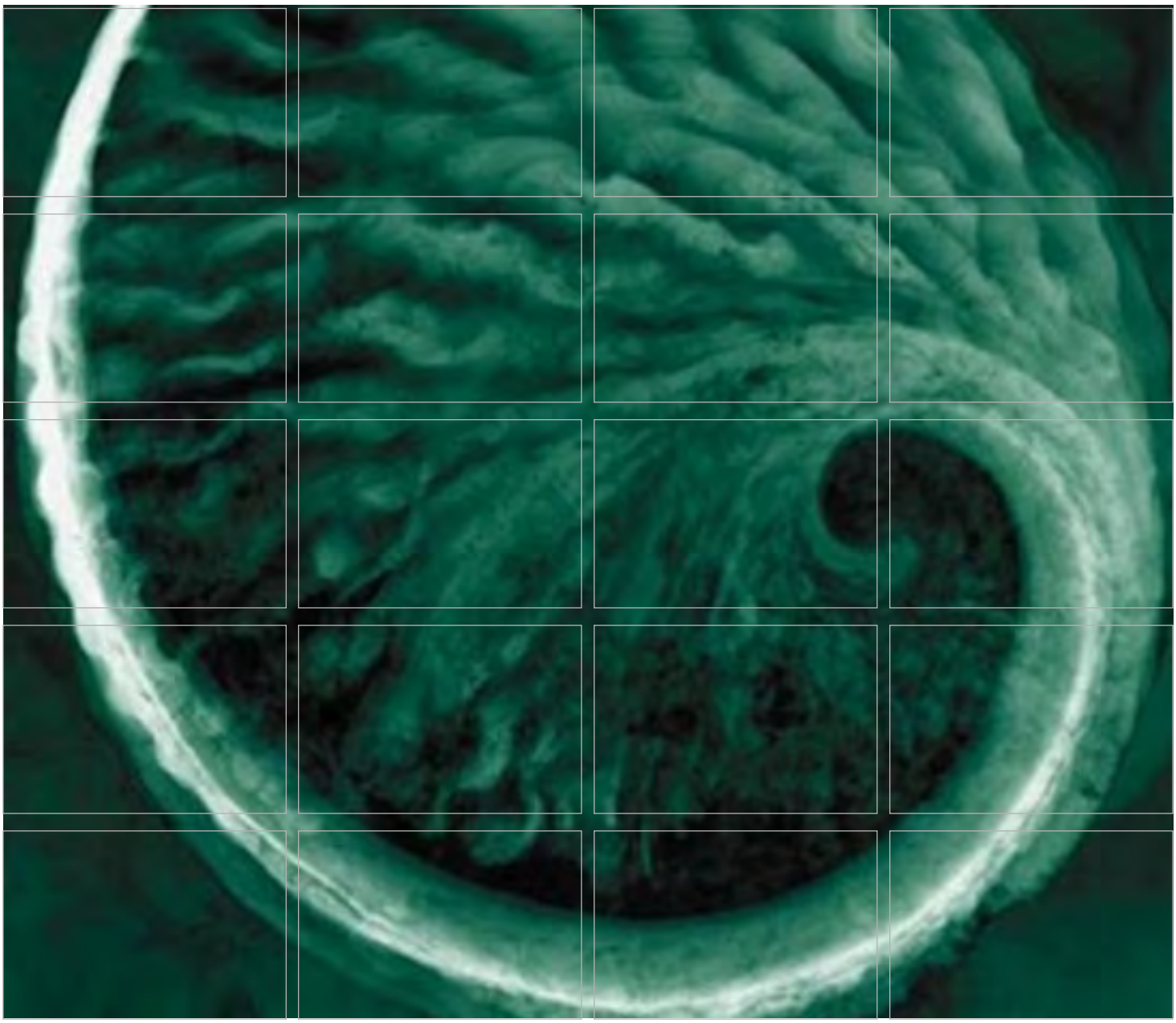
Annex F

Strategic Environmental Assessment



The Joint Municipal Waste Management Strategy
for Herefordshire and Worcestershire 2004 - 2034

First review August 2011



Annex F

Strategic Environmental Assessment

Environmental Report

February 2009

Delivering sustainable solutions in a more competitive world

ERM

Worcestershire County Council

Annex F

Strategic Environmental Assessment

Environmental Report

February 2009

Prepared by Natalie Maletras

For and on behalf of
Environmental Resources Management

Approved by: Paul Fletcher _____

Signed: _____

Position: Partner _____

Date: February 2009 _____

CONTENTS

EXECUTIVE SUMMARY

This report sets out the results of a Strategic Environmental Assessment of the draft Joint Municipal Waste Management Strategy (JMWMS or 'the Strategy') for Herefordshire and Worcestershire. This is based on appraisal of the draft of the JMWMS, issued for consultation in February 2009.. The purpose is to inform the consultation on the JMWMS by setting out information on the likely effects of its implementation and on the relative performance of the options, and making recommendations for improvements to the JMWMS.

Draft Headline Strategy

The Strategy has a very strong commitment to promoting the waste hierarchy, promoting greater resource efficiency and a reduction in greenhouse gas emissions. Energy recovery is promoted in preference to landfill, although no particular commitments are made. The Strategy will seek to improve access to waste services and promote greater public participation. It will also indirectly support business growth in the waste sector and the development of new resource-efficient technologies.

The effect of the Strategy on traffic and transport is unclear. Increased recycling and recovery could lead to greater waste transport distances, while better waste minimisation will help to reduce the need for transport. The Strategy has a clear commitment to minimise the amount of waste transport required, although it lacks detail in the supporting text as to how this is likely to be achieved and greater clarity should be provided.

Promoting recovery of resources from waste will require construction of new facilities, particularly treatment facilities. The significance of impacts on environmental and historic assets is unknown and depends strongly on local conditions, on planning and development control and on operational standards; factors which are outside the scope of the JMWMS.

Mitigation is recommended to:

- clarify actions to achieve a minimisation of transport distances;
- clarify engagement with commercial sector waste producers and processors;
- promote energy recovery wherever practicable, including from landfill gas;
- commit to ensuring good accessibility to Household Waste Sites across the two counties, providing new sites where required;
- include measures to reduce fly-tipping.

Minimisation Options

Enhancement of home composting activity will produce the greatest sustainability development benefits of the options, providing the greatest degree of minimisation, and in reduction in waste transport and in landfill of biodegradable waste. This scheme involves the greatest amount of participation by the public, and by making alternative soil improvers available it will reduce consumption of natural resources and may help to increase biodiversity. Finally, it is estimated to provide the greatest economic gain.

Efforts to minimise the amount of food waste would also provide a significant range of benefits, although not to the same degree as home composting. The performance of other proposed service enhancements are more mixed.

It is therefore recommended that resources are focused as a priority on enhancing home composting and food waste reduction initiatives, with some additional effort directed to increasing junk mail prevention and promoting smart shopping as a secondary priority. Enhancing reuse initiatives could also be promoted as a third priority for their social benefits.

Recycling Options

Providing the widest possible range of recyclable collection services will secure most sustainability benefits, principally deriving from the recycling of significantly greater tonnages of green and food waste than other options. However, it is expected to incur significant additional costs for food waste collections with additional fleet and manpower requirements.

Of the options which exclude area-wide food waste collections, options which have area-wide green waste collections secure most benefits overall because of the increased tonnages of waste recycled, principally biodegradable waste.

Residual Options

A residual waste solution based on Energy from Waste with combined heat and power (EfW/CHP) provides the greatest sustainability benefits in comparison to the other options, maximising performance against the waste hierarchy and minimising the landfilling of biodegradable waste, while providing the greatest reduction of greenhouse gas emissions and also enabling the generation of renewable energy. It will also minimise the requirements for onward transport of process outputs. Whilst it does not secure the lowest total costs, it compares reasonably favourably to other options on cost.

The overall environmental burden will be reduced with EfW/CHP, although by less than with autoclave or mechanical biological treatment (MBT). Local emissions may give rise to environmental effects with all options, but these could be minimised with autoclave or MBT technologies. However, the significance of effects is strongly dependent on location and on operational standards.

Exporting waste out of the sub-region to an EfW plant does not provide any benefits over and above those provided by EfW within the sub-region, and performs less well against a number of the appraisal objectives.

1 NON-TECHNICAL SUMMARY

1.1 INTRODUCTION

The local authorities that make up the Joint Waste Resource Management Forums for Herefordshire & Worcestershire[1] are currently in the process of revising their Joint Municipal Waste Management Strategy (JMWMS). The JMWMS describes current and future arrangements for waste management in Herefordshire and Worcestershire, and will set the strategic approach to municipal waste management for the two counties for the next thirty years.

Under the *Environmental Assessment of Plans and Programmes Regulations 2004,* the JMWMS must be subjected to a Strategic Environmental Assessment (SEA) before it is adopted. The SEA is required systematically to assess the strategy against a list of environmental, economic and social criteria. It should identify, describe and evaluate the likely significant effects of implementing the Strategy, and reasonable alternatives, taking into account the objectives and scope. These issues must be taken into account in the preparation of the JMWMS.

1.2 OUTLINE OF THE STRATEGY AND ITS RELATIONSHIP WITH OTHER PLANS AND PROGRAMMES

The JMWMS sets out a number of principles which will govern the way that municipal waste is managed in Herefordshire and Worcestershire over the next 20 to 25 years. These principles will set the framework which will guide the implementation of the policies which follow in the JMWMS.

Table 1.1 Summary of Principles

Principle One	Meeting the challenge of climate change by viewing waste as a resource
Principle Two	Commitment to the waste hierarchy of which waste prevention is the top
Principle Three	Influencing Government, waste producers and the wider community
Principle Four	Continued commitment to re-use, recycling and composting
Principle Five	Minimising the use of landfill
Principle Six	Partnership
Principle Seven	Monitoring and review
Principle Eight	Customer focus
Principle Nine	Value for money
Principle Ten	Consideration of social, environmental and economic impacts

The principles have been further developed into a set of detailed 24 policies by which those principles will be delivered, and a series of six targets which the JMWMS will aim to achieve or promote. Further information about the policies and targets is provided in *Section 3.1.2.*

(1) [1] Herefordshire Council, Worcestershire County Council, Worcester City Council, Bromsgrove District Council, Malvern Hills District Council, Redditch Borough Council, Wychavon District Council and Wyre Forest District Council

The JRMWMS sits within a framework of other policy documents which together influence both the content of the strategy and its implementation. The most important of these are:

- European Union legislation, most importantly the *Landfill Directive*.
- National legislation, principally the *Waste and Emissions Trading Act 2003*
- National waste policy, in particular that set out in *Waste Strategy 2007*[1] and *Waste Not Want Not*[2].
- National guidance[3] on MWMS.
- Regional Planning Guidance[4] for the West Midlands.
- The *Worcestershire County Structure Plan* and *Herefordshire Unitary Development Plan*.
- Local Area Agreements (LAAs) for Herefordshire and Worcestershire.
- Local authorities' non-statutory strategies and plans, such as Community Strategies and Climate Change Strategies.

Section 3.2 explains the relationship of these plans and strategies to the JMWMS.

1.3 SUMMARY OF SIGNIFICANT ISSUES AND PROBLEMS IDENTIFIED

The significant issues relevant to waste management which have been identified through the review of policy and available baseline data are summarised in *Table 1.2*.

Table 1.2 Key Sustainability Issues for Herefordshire and Worcestershire

Category	Key Issues
Waste	Municipal waste comprises 30% of the total waste stream in Herefordshire & Worcestershire. Just under two thirds is landfilled, with 26% recycled or composted in Herefordshire and 32% in Worcestershire. This compares with an England average of 31%.
Climate change	Of the estimated 7 million tonnes of carbon dioxide emitted in the sub-region, 3% arose from waste treatment and disposal in Worcestershire and less than 1% in Herefordshire. About 300km^2 of the sub-region is likely to flood at least once in 100 years, representing 8% of the land area.
Transport	There is relatively little traffic congestion on the road network, although there are a number of key areas of congestion including river crossings and within some urban areas. In Air Quality Management Areas (AQMAs) have been designated in Hereford and Leominster because of traffic pollution.
Growth with prosperity for all	The employment rate for Herefordshire and Worcestershire is higher than the regional and national averages.
Participation by all	Over 90% of households in Worcestershire are covered by kerbside recycling services, while just under 70% of households are covered in Herefordshire.

[1] *Waste Strategy for England 2007*, Department for Environment, Food and Rural Affairs, May 2007

[2] *Waste Not Want Not: A Strategy for Tackling the Waste Problem in England*, Cabinet Office Strategy Unit, November 2002

[3] *Guidance on Municipal Waste Management Strategies*, Defra, July 2005

[4] *Regional Planning Guidance for the West Midlands: RPG11*, Government Office for the West Midlands, June 2004

Category	Key Issues
Energy generation and use	There are a number of industrial and commercial installations in Worcestershire employing wind turbines, combustion of waste materials, biogas and clean biomass. The largest remain those associated with landfill gas generation. Feasibility studies are currently being conducted that will increase current installations by approx 25MWe and 80MWt.
Landscape	Three areas within Herefordshire & Worcestershire are designated as Areas of Outstanding Natural Beauty (AONBs), due to their recognised high landscape interest. These are the Cotswolds, the Malvern Hills and the Wye Valley.
Biodiversity, flora and fauna	In March 2005, 19% of Sites of Special Scientific Interest (SSSI) in Herefordshire and 72% in Worcestershire were in a good condition. There are 6 Special Areas of Conservation (SACs), 7 National Nature Reserves (NNRs) and 31 Local Nature Reserves in the sub-region, and almost 19,000 ha of ancient semi natural woodland. The local Biodiversity Action Plans provide a plan of action for 8 priority habitats and 16 priority species in Worcestershire, and 21 priority habitats and 156 priority species in Herefordshire.
Natural resources (air, water and soil)	Six air quality management areas (AQMA) declared due to poor air quality, all associated with busy arterial and main roads. The water quality of the majority of rivers within Herefordshire & Worcestershire are judged in good condition. Kidderminster and Bromsgrove overlie a major aquifer of high vulnerability which spreads south along the line of the Severn.
Access to services	Nearly 40% of areas in Worcestershire are ranked within the top 20% most deprived areas nationally in terms of distance to basic services, while over 60% of areas in Herefordshire are within this category.
Health	The healthy life expectancy of people living in Worcestershire is approximate to the English average whereas that of Herefordshire residents is above average.
Learning and skills	Employment projections indicate that there will be a decline in employment within the primary sectors, including agriculture, engineering and other manufacturing and construction. Over half of Herefordshire's businesses reported having trouble recruiting skilled manual/technical workers.
Cultural heritage, built design and archaeology	Over 12,000 listed buildings, 443 Scheduled Ancient Monuments, 211 conservation areas, 2 registered battlefields, 39 historic parks and gardens, and 39,000 entries on county historic sites records. In 2005, 36 buildings of grade I and II* were classified as being at risk.
Material assets	Construction aggregates make up most of the mineral output of Worcestershire. Mineral resources in Herefordshire are relatively limited, primarily consisting of aggregates.

1.3.1 Areas Likely to be Significantly Affected

The effects of implementation of the JMWMS can be considered on two levels. First, the overall effects will be spread throughout the two counties, because waste arises almost everywhere, waste transport will occur throughout the sub-region and the some of the impacts of waste management activities will be widespread and borne by all. In this case, the relevant sustainability characteristics are those set out in the baseline above.

On another level, some of the effects of the management of waste will occur in the vicinity of waste management sites. The JMWMS does not address issues

of site location, and therefore to a large extent it has not been possible in the assessment to deal with site-specific issues. The assessment has considered issues which may arise in the vicinity of sites in general, but consideration and control of issues at individual sites is the responsibility of the Waste Development Frameworks for Herefordshire and Worcestershire.

1.3.2 EU-Designated Sites Potentially Relevant to the JMWMS

There are five internationally designated sites within the sub-region, and there is the potential for four of them to be affected by waste management activities within the two counties[1]. These are:

- River Wye SAC: vulnerable to water abstraction and water discharges.
- Wye Valley and Forest of Dean Bat Sites SAC: vulnerable to land use change.
- Wye Valley Woodlands SAC: vulnerable to NOx emissions and land use change.
- Bredon Hill SAC: vulnerable to diffuse air pollution and direct land take.

In addition, two sites beyond the county boundaries could potentially be affected by activities within the counties:

- Severn Estuary SPA/cSAC/Ramsar: under considerable pressure for water supply.
- River Usk SAC: increased abstractions and low flow are a cause for concern.

1.4 SUSTAINABLE DEVELOPMENT OBJECTIVES RELEVANT TO THE JMWMS

In order to identify the sustainable development objectives for the SEA, a review was undertaken of the environmental, social and economic policy framework relevant to Herefordshire and Worcestershire. This involved reviewing key documents at international, national, regional and local level, which set the policy framework governing activities in the sub-region, to identify the policy objectives with which waste management in the sub-region must or should conform. These are set out in *Box 1.1*.

[1] *Habitats Regulations Assessment of the Phase II Revision of the Regional Spatial Strategy for the West Midlands*, URSUS Consulting Ltd Treweek Environmental Consultants, October 2007

Box 1.1 Key Policy Objectives for the SEA

Social

(1) Access to services is a key issue, particularly for people living in rural areas.

(2) Promote and improve access to education.

(3) Enable communities to participate in and contribute to the issues that affect them.

(4) Pockets of deprivation exist in the region.

(5) Provision of decent affordable housing for all.

(6) Promote communities that are healthy and support vulnerable people.

(7) Address health inequalities.

(8) Tackle crime, fear of crime and anti-social behaviour

Environmental

(9) Encourage and enable waste minimisation, reuse, recycling and recovery, in order to meet national, regional and local targets.

(10) Prevent or reduce the negative effects of waste management on the environment.

(11) Target of 10% reduction in gas emissions that cause climate change by 2010 and 20% by 2020.

(12) Improve energy efficiency and increase use of renewable energy. 10% of the UK's electricity should be coming from renewable energy sources by 2010 and 20% by 2020.

(13) Development should be focused in, or next to, existing towns and villages with previously developed land used in preference to greenfield.

(14) Encourage and promote land use activities which will lead to an improvement in the quality of its natural resources.

(15) Development should be informed by and sympathetic to the landscape character of the locality.

(16) Protection of the natural and cultural heritage of the area.

(17) The area is subject to potential flooding from, in particular, the Rivers Severn, Teme, Avon, Stour and Wye, and from surface run-off.

(18) There is an emphasis on reducing the need to travel and the challenge of addressing hotspots of road congestion.

Economic

(19) Ensure prudent and efficient use of natural resources.

(20) Ensure the efficient transportation of freight within the region, so as to support a strong long economy, but not at a compromise to existing or future needs of society or the environment.

(21) On a workplace basis average earnings well below national comparators combined with a relatively low level of skilled workforce in the area.

(22) Significant proportion of workforce employed in declining industries

1.5 APPRAISAL FRAMEWORK

The above conclusions of the baseline data review and the review of policy were collated and used to develop a framework of objectives against which the JMWMS could be appraised. This framework represents a list of the key sustainable development objectives which the JMWMS should either conform with or seek to deliver or support. The objectives identified are listed in *Table*

1.3. The proposed strategy and relevant options were assessed against these objectives to identify and evaluate the likely effects of the strategy.

Table 1.3 Appraisal Objectives

1. Waste
Manage the waste streams in accordance with the waste hierarchy, encouraging reuse and recovery addressing waste as a resource
To minimise the production of waste generated
2. Climate Change
Reduce causes of and adapt to the impacts of climate change
Minimise biodegradable waste going to landfill
Maximise opportunities to generate power from methane at landfill sites
3. Traffic & Transport
To reduce the need to travel and move towards more sustainable travel patterns
Ensure the disposal of waste as close to point of origin as practicable and promote transfer of waste by rail or water transport where appropriate
4. Growth with prosperity for all
Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all have access to the benefits urban and rural
To encourage business development within the waste sector to achieve Government targets for waste
To encourage rural regeneration
5. Participation by all
To provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhoods and quality of life, encouraging pride and social responsibility in the local community
To provide opportunities for communities to participate in and contribute to waste planning decisions
6. Technology, innovation & inward investment
Promote and support the development of new technologies of high value and low impact, especially resource efficient technologies and environmental technology initiatives
To make an economic gain from the recovery and treatment of waste streams wherever this is environmentally acceptable
7. Energy
Promoting energy efficiency and energy generated from renewable energy and low carbon sources
In accordance with waste hierarchy support the generation of energy from waste
8. Natural resources
Protect and improve standards of air, water and soil quality ensuring prudent use of natural resources
Minimise the creation of dust, odour and noise and other pollutants in the vicinity of waste station / facilities
9. Access to services
To improve the quality of and equitable access to local services and facilities, regardless of age, gender, ethnicity, disability, socioeconomic status or educational attainment
To improve accessibility to kerbside recycling and Household Waste Sites
10. Landscape
Safeguard and strengthen landscape character and quality
Encourage design that reduces visual intrusion and is sensitive to the local vernacular, as defined by the county landscape character assessment, *county historic landscape characterisation* and conservation area appraisals
11. Biodiversity / Geodiversity / Flora / Fauna
To conserve and enhance biodiversity and geodiversity
To assist in meeting Biodiversity Action Plan targets during the lifetime of the JMWMS
12. Health
To improve the health and well being of the population and reduce inequalities in health
To limit environmental impacts of waste treatment facilities on the local population including pest species at landfill sites
To reduce respiratory diseases/allergy related illness
13. Provision of housing
Provide decent affordable housing for all, of all the right quality and tenure and for local needs, in clean, safe and pleasant local environments

Encourage the use of sustainable building technologies in new housing developments in particular the re-use of construction and demolition waste
Promote the provision of recycling facilities within new housing developments
14. Learning and skills
To raise the skills level and qualifications of the workforce
To encourage engagement in community/environmentally responsible activities
15. Cultural heritage, architecture and archaeology
Conserve and enhance the architecture, cultural and historic environment heritage and seek well designed, resource efficient, high quality built environment in new development proposals
Promote design concepts for new buildings that are informed by the local vernacular
The siting of new waste management facilities should not have a detrimental effect on the setting and in-situ conservation of historic buildings, areas, landscapes or archaeological remains
16. Material assets
Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, lands of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space, biodiversity interest *or the historic environment*
To support the reuse of construction materials
To protect land from contamination arising from waste
To restore landfill sites to amenity purposes.
17. Crime
Reduce crime, fear of crime and antisocial behaviour
Reduce the number of fly tipping incidents
18. Flooding
Ensure inappropriate development does not occur in high risk flood areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas
Ensure development does not occur in flood risk areas

1.6 LIKELY SIGNIFICANT EFFECTS OF THE JMWMS

1.6.1 Waste Minimisation

A range of initiatives are already in place for minimising the amount of waste generated in Herefordshire and Worcestershire. Further options for waste minimisation have examined the potential for enhancements to the current initiatives to achieve improved performance, as follows:

- Home composting
- Food waste reduction campaign
- Re-use initiatives
- Promoting sink disposal units
- Home shredding service for green waste
- Junk mail reduction campaign
- Real Nappy Project and Real Nappy Incentive Scheme
- Waste collection policies e.g. side waste restrictions

The results show that enhancement of home composting activity would produce the greatest benefits against a large number of sustainable development objectives. It will enable the greatest degree of minimisation, allowing the greatest reduction in waste transport and in landfill of biodegradable waste. This scheme involves the greatest amount of participation by the public, and by making alternative soil improvers available

it will reduce consumption of natural resources and may help to increase biodiversity. Finally, it is estimated to provide the greatest economic gain.

Additional efforts to minimise the amount of food waste would also provide a significant range of benefits, although not to the same degree as home composting. The performance of the other proposed service enhancements are more mixed, with a range of positive and negative effects.

It is recommended that resources are focused as a priority on enhancing home composting and food waste reduction initiatives, with some additional effort directed to increasing junk mail prevention and promoting smart shopping as a secondary priority. Enhancing reuse initiatives could also be promoted as a third priority for their social benefits.

1.6.2 Recycling and Composting

Existing recycling services in Herefordshire and Worcestershire consist of a range of kerbside collection services in the different authorities together with recycling at bring sites and at Household Waste Sites. The recycling and composting options looked at different ways of enhancing those services, by combining the following service enhancements in different ways and comparing them to current service performance levels:

- Full core kerbside recycling service, involving collection of glass, paper and card, foil, cans and plastics across all authorities;
- Green waste collection in Bromsgrove;
- Paid-for green waste collection everywhere;
- Food waste collection in Wychavon;
- Food waste collection everywhere;
- Recycling street sweepings.

The following options have been devised.

Table 1.4 Recycling Options

	A	B	C	D	E	F	G	H	I
Status quo – current service levels	✓								
Full core kerbside recycling service		✓	✓	✓	✓	✓	✓	✓	✓
Green waste collection in Bromsgrove		✓							
Green waste collection everywhere			✓			✓	✓		✓
Food waste collection in Wychavon									✓
Food waste collection everywhere				✓		✓			
Recycling street sweepings					✓	✓	✓		✓

The option which includes the widest possible range of services (option F) secures most sustainability benefits, principally deriving from the recycling of significantly greater tonnages of biodegradable waste than other options, with collections of green and food waste across the whole of the two counties. However, it is expected to incur significant additional costs for food waste collections with additional vehicle fleet and manpower requirements.

Of the options which exclude area-wide food waste collections, options which have area-wide green waste collections (options C, G and I) secure more benefits overall than other options because of increased tonnages of waste recycled, principally biodegradable waste. Option I performs slightly better than option G due to the additional food waste collection in Wychavon which secures slightly greater reductions of biodegradable waste, although this also has additional costs with additional vehicle fleet and manpower requirements.

1.6.3 Residual Treatment

In developing the options for residual waste treatment, consideration was given to the type of technology which might be employed taking account of the likely deliverability and appropriateness for the local context. Consideration was also given to the potential number and scale of facilities, in particular the possibility of delivering a residual treatment solution with smaller facilities on more than one site. Finally, an option that utilises waste treatment capacity outside the Partnership area was also considered. This option was subjected to a sensitivity test to determine the extent to which its performance was affected by the nature of the plant rather than its location.

The final options considered for residual treatment technology are set out in the table below.

Table 1.5 Residual Treatment Technology Options

Option	Description
A	1 site Energy from Waste (EfW)
B	1 site EfW with Combined Heat and Power (CHP)
C	2 site Mechanical Biological Treatment with on-site combustion
D	2 site Mechanical Biological Treatment with off-site combustion
E	1 site autoclave
F	2 site autoclave
G	Out of county EfW
G2	Out of county EfW (alternative plant type)

The appraisal showed that each of the options performs well against some objectives and less well against others, but that no one option performs better than the others consistently for all objectives.

However, the results show that a residual waste solution based on Energy from Waste with CHP provides the greatest sustainability benefits in comparison to the other options, maximising performance against the waste hierarchy and minimising the landfill of biodegradable waste, while providing the greatest reduction of greenhouse gas emissions and also enabling the generation of renewable energy. It will also minimise the requirements for onward transport of process outputs. Whilst it does not offer a solution with the lowest total costs, it compares reasonably favourably to other options on cost.

The overall environmental burden will be reduced with option B, although not by as much as with autoclave (options E and F) or MBT (options C and D).

Local emissions may give rise to environmental effects with all options, including effects on vegetation and ecosystems, but these could be minimised with autoclave or MBT technologies. However, the significance of any effects is strongly dependent on choice of location and on operational standards.

An option whereby waste is exported out of Herefordshire and Worcestershire to an EfW plant does not provide any benefits over and above those provided by EfW within the sub-region, and performs less well against a number of the appraisal objectives.

1.6.4 Strategic Objectives

The Strategy has a very strong commitment to promoting the waste hierarchy, promoting greater resource efficiency and a reduction in greenhouse gas emissions. Energy recovery is promoted in preference to landfill, although no particular commitments are made. The Strategy will seek to improve access to waste services and promote greater public participation. It will also indirectly support business growth in the waste sector and the development of new resource-efficient technologies.

The effect of the Strategy on traffic and transport is unclear. Increased recycling and recovery could lead to greater waste transport distances, while better waste minimisation will help to reduce the need for transport. The Strategy has a clear commitment to minimise the amount of waste transport required, although it lacks detail in the supporting text as to how this is likely to be achieved and greater clarity should be provided.

Promoting recovery of resources from waste will require construction of new facilities, particularly treatment facilities. The significance of impacts on environmental and historic assets is unknown and depends strongly on local conditions, on planning and development control and on operational standards; factors which are outside the scope of the JMWMS.

1.7 MITIGATION RECOMMENDATIONS

Arising from the results and conclusions of the appraisal of the strategy, a number of recommendations are made to improve its effects. These include the following amendments to the draft Headline Strategy:

- clarify actions to achieve a minimisation of transport distances;
- clarify engagement with commercial sector waste producers and processors;
- promote energy recovery wherever practicable, including from landfill gas;
- commit to ensuring good accessibility to Household Waste Sites across the two counties, providing new sites where required;
- include measures to reduce fly-tipping.

1.8 *MONITORING RECOMMENDATIONS*

The report sets out a series of recommendations for monitoring the effects of implementing the strategy, including suggesting a number of indicators for undertaking the monitoring. Monitoring of strategy implementation should focus on its effectiveness in several key areas:

- the achievement in managing waste at levels of the waste hierarchy, including in relation to past performance to show improvement;
- the effects on waste transport in terms of waste distances and vehicle movements;
- access to and participation in reuse and recycling/composting services;
- reporting on the councils' waste-related activities, including costs and effectiveness.
- the capacity of recycling, composting and treatment facilities in Herefordshire and Worcestershire
- the performance of treatment and disposal facilities, including impacts of activities and energy generation.

1.9 *THE DIFFERENCE THE SEA PROCESS HAS MADE TO DATE*

Two separate presentations were made to both Officers & Members of the Worcestershire & Herefordshire Waste Partnership on the results of the SEA prior to the draft JMWMS being published. The outcomes of the SEA were used to inform Member and Officer decisions on draft policies.

1.10 *HOW TO COMMENT ON THE REPORT*

This Environmental Report is published for consultation alongside the draft JMWMS, with the purpose of informing that consultation by providing information about the likely sustainability effects of implementing the strategy. However, as well as inviting consultation comments on the draft JMWMS, comments are also invited on the Environmental Report itself.

The consultation begins on 16 February 2009 and closes on 25 May 2009. Any comments must be received by this date and should be sent to:

wastestrategy@worcestershire.gov.uk

1.11 BACKGROUND

1.11.1 The Draft Joint Municipal Waste Management Strategy

The local authorities that make up the Joint Waste Resource Management Forums for Herefordshire & Worcestershire (namely Herefordshire Council, Worcestershire County Council, Worcester City Council, Bromsgrove District Council, Malvern Hills District Council, Redditch Borough Council, Wychavon District Council and Wyre Forest District Council) are currently in the process of revising their Joint Municipal Waste Management Strategy (JMWMS).

The JMWMS describes current and future arrangements for waste management in Herefordshire and Worcestershire, and will set the strategic approach to municipal waste management for the two counties for the next thirty years. It provides an integrated approach which encompasses both collection and disposal functions, and aims to clarify key issues and give clear direction on waste management. It sets out general principles, policies and targets across all authorities in Herefordshire and Worcestershire.

The JMWMS replaces the original JMWMS for Herefordshire and Worcestershire published in 2004.

1.11.2 Strategic Environmental Assessment

Under the *Environmental Assessment of Plans and Programmes Regulations 2004,* the JMWMS must be subjected to a Strategic Environmental Assessment (SEA) before it is adopted. The SEA is a tool for integrating environmental and sustainability considerations into the preparation of the JMWMS, by considering the effects of implementing the plan or strategy during its preparation and before its adoption. The SEA is required systematically to assess the strategy against a list of environmental, economic and social criteria. It should identify, describe and evaluate the likely significant effects of implementing the Strategy, and reasonable alternatives, taking into account the objectives and scope. These issues must be taken into account in the preparation of the JMWMS.

As part of the SEA process, an appraisal has been undertaken of the draft JMWMS and options which have been developed by the Joint Waste Resource Management Forums for Herefordshire & Worcestershire. This has identified the key sustainability implications of those issues and options, with the aim of informing the process of development of the Strategy. This document sets out the results of this appraisal and highlights the main implications of the options. It makes recommendations for mitigating the predicted adverse effects of the JMWMS and for maximising opportunities for benefits.

The SEA has been undertaken to comply with the requirements of the SEA Directive[1]. This requires an assessment of the likely effects of the JMWMS on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage and landscape. Good practice in the UK and elsewhere dictates that, to be properly balanced and take account of all important issues, an appraisal must be broadened out to include an assessment of a wide range of sustainability impacts, including those required by the SEA Directive. The term Sustainability Appraisal is often used to indicate this somewhat broader scope. In this report, the assessment is referred to as a Strategic Environmental Assessment or SEA, as this is what is required by national legislation although, in fact, it has the scope of a Sustainability Appraisal including an SEA.

(1) [1] *Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment*

2 PROCESS

2.1 SCOPING

The first step in the SEA work was a scoping stage, to identify the sustainability context for municipal waste management in Herefordshire and Worcestershire.

The scoping stage involved the collection of a wide range of baseline data covering economic, social and environmental issues in order to provide a picture of the current sustainability status of the two counties and to identify emerging trends where possible. The baseline data was analysed to identify the key sustainability issues for the area, within the particular context of municipal waste management.

In tandem with the baseline data collection and analysis, a review was undertaken of the national, regional and local policy framework relevant to sustainable development in Herefordshire and Worcestershire. This involved:

- reviewing key environmental, social and economic documents which set the policy framework governing activities in the sub-region; and

- identifying the sustainable development policy objectives and targets with which municipal waste management in the sub-region must or should conform, and highlighting the key implications for the SEA.

On the basis of this work, a set of relevant sustainable development policy objectives were drawn up against which to appraise the JMWMS.

The results of the scoping stage were set out in a Scoping Report[1] which was issued to key stakeholders for consultation in April 2008. The following stakeholder organisations were consulted:

- Environment Agency
- Natural England
- English Heritage
- Herefordshire Wildlife Trust
- Worcestershire Wildlife Trust
- Worcestershire Primary Care Trust

Six responses were received; one from each of the consultees. The main comments related principally to the coverage of baseline data, key issues (specifically flood risk, waste management, the historic environment and biodiversity), additional documents for the policy review, and the prioritisation of appraisal objectives. Consultation comments have been taken

(1) [1] *Sustainability Appraisal for the Joint Municipal Waste Management Strategy: Scoping Report Version 4*, Herefordshire Council and Worcestershire County Council, April 2008

on board and further scoping work undertaken to ensure that the relevant key issues and policies are reflected in the framework.

2.2 *DRAFT HEADLINE STRATEGY AND OPTIONS*

The emerging JWMWS consists of a draft Headline Strategy and three sets of options which underpin the Strategy, on waste minimisation, recycling and composting and residual waste treatment.

The draft Headline Strategy comprises:

- a set of ten principles governing the overall approach to municipal waste management;
- 23 policies and associated targets which aim to implement the principles; and
- supporting text which clarifies the aims and intended outcomes of the policies.

The waste minimisation options look at ways of enhancing each of the existing services currently promoted by the councils:

- Home composting
- Food waste reduction campaign
- Re-use initiatives
- Promoting sink disposal units
- Home shredding service for green waste
- Junk mail reduction campaign
- Real Nappy Project and Real Nappy Incentive Scheme
- Waste collection policies eg side waste restrictions

The recycling and composting options consider different ways of combining the following service enhancements, comparing them to current service performance levels:

- Full core kerbside recycling service
- Green waste collection in Bromsgrove
- Paid-for green waste collection everywhere
- Food waste collection in Wychavon
- Food waste collection everywhere
- Recycling street sweepings

The residual waste treatment options examine and compare the following alternative technologies:

- 1 site EfW
- 1 site EfW with CHP
- 2 site MBT with on site combustion
- 2 site MBT with off site combustion

- 1 site autoclave
- 2 site autoclave
- Out of county EfW

In addition, a sensitivity test was carried out for the EfW option, to examine the effect that a different type of EfW plant would have on the results.

2.3 *APPRAISAL*

The appraisal determined the likely effects arising from the principles, policies and targets of the draft Headline Strategy. It also assessed the minimisation, recycling and residual treatment options to identify the likely effects of each and to compare the alternatives being considered.

This was done by assessing the Strategy and each option against the appraisal objectives in turn. The objectives, developed as discussed above, are listed in *Table 3.5*.

An assessment was made of the likely effects of the options and the draft Headline Strategy, with reference where relevant and possible to the baseline data from the Scoping Report. For the Strategy, the assessment was largely qualitative in nature. For the three sets of options, quantitative data was available from the technical options appraisal carried out separately for the JMWMS by ERM and by in-house staff of Worcestershire County Council and reported in separate reports. The quantitative information from these reports was supplemented with other more qualitative assessments to ensure complete coverage of the appraisal objectives.

The effects were also rated for their significance in terms of the importance for achieving each appraisal question within the context of the SEA objective. The factors were:

- the expected scale of the effects or the degree to which the effects are likely to contribute to the achievement of the appraisal objective in the sub-region overall;
- the certainty or probability that the effect is likely to occur as a consequence of the policies or options;
- whether the effects would be permanent or reversible;
- whether or not the effect will occur as a direct result of the option or policy, in other words whether the policies or options are key for achieving or controlling effects;
- whether the effect is more strongly dependent on other interventions or other factors;
- how important the objective is in differentiating between options.

The appraisal of the principles of the JMWMS was undertaken according to the recommendations in government guidance, by undertaking a compatibility assessment of the objectives against the SEA appraisal

objectives. The purpose of this is to identify the positive compatibilities between the two sets of objectives and also where there are potential conflicts.

The main conclusions of the appraisal are set out in *Sections 0* and *4*.

The appraisal was undertaken in an iterative fashion. An initial appraisal was carried out in November 2008 on an early draft of the JMWMS. This made several recommendations which were taken into account in making further amendments to the draft JMWMS during late 2008 and early 2009. A final appraisal was undertaken on the consultation draft of the JMWMS in January 2009.

2.3.1 Consultation

This Environmental Report will be issued for consultation alongside the draft JMWMS between 16 February and 25 May 2009. The purpose of the SEA is to inform the consultation on the JMWMS so that consultees can better understand the likely sustainability effects of implementing the JMWMS and are able to respond to the consultation from a more informed perspective. As well as inviting comments on the JMWMS, comments are also invited on the Environmental Report itself.

2.3.2 Post-Consultation

Following the public consultation on the draft JMWMS, it may be necessary to undertake a further appraisal of the JWMWS if the amendments to it are sufficiently major as to change the likely effects of its implementation. If so, the final JMWMS will be reappraised and an amended Environmental Report issued.

Following adoption of the JMWMS, a post-adoption statement must be prepared which will set out how the SEA process has influenced the development of the JMWMS, as well as the recommendations made for monitoring its implementation.

3 SUMMARY OF THE JMWMS AND CONTEXT

3.1 SUMMARY OF THE STRATEGY

3.1.1 Principles

The JMWMS sets out a number of principles which will govern the way that municipal waste is managed in Herefordshire and Worcestershire over the next 20 to 25 years. These principles will set the framework which will guide the implementation of the policies which follow in the JMWMS.

Table 3.1 Summary of Principles

Principle One	Meeting the challenge of climate change by viewing waste as a resource
Principle Two	Commitment to the waste hierarchy of which waste prevention is the top
Principle Three	Influencing Government, waste producers and the wider community
Principle Four	Continued commitment to re-use, recycling and composting
Principle Five	Minimising the use of landfill
Principle Six	Partnership
Principle Seven	Monitoring and review
Principle Eight	Customer focus
Principle Nine	Value for money
Principle Ten	Consideration of social, environmental and economic impacts

3.1.2 Policies and Targets

The principles have been further developed into a set of detailed 24 policies by which those principles will be delivered, and a series of six targets which the JMWMS will aim to achieve or promote.

Table 3.2 JMWMS Policies

Policy 1	Adopt the waste hierarchy
Policy 2	Provide good value for money
Policy 3	Meet customer needs
Policy 4	Achieve LAA targets
Policy 5	Implement sustainable procurement
Policy 6	Consistent and transparent performance monitoring
Policy 7	Minimise greenhouse gas emissions
Policy 8	Core recycling and residual collection service
Policy 9	Implement waste reduction initiatives
Policy 10	Process green and kitchen waste within the household
Policy 11	Lobby for measures to combat waste growth
Policy 12	Work with third sector and contractors to promote reuse
Policy 13	Achieve recycling, composting and recovery targets
Policy 14	Provide and enhance Bring Recycling Sites
Policy 15	Maximise potential of Household Recycling Centres
Policy 16	Balance environmental, social and economic impacts for recovery
Policy 17	Increase recovery and diversion of biodegradable waste
Policy 18	Work together on waste prevention, re-use and recycling schemes and raise awareness of climate change issues
Policy 19	Raise awareness of resource management issues

Policy 20	Encourage re-use and recycling by the commercial, voluntary and community sectors
Policy 21	Seek sustainable waste management through planning process
Policy 22	Align strategy with Regional Spatial Strategy and other policies
Policy 23	Minimise carbon emissions from transport
Policy 24	Promote prevention, re-use, recycling and recovery for specific waste streams

Table 3.3 JMWMS Targets

Target 1	Climate change target, to be developed
Target 2	Waste prevention
Target 3	Recycling and composting
Target 4	Kerbside recycling collections
Target 5	Recovery
Target 6	Reduction of biodegradable landfill

3.2 RELATIONSHIP OF JMWMS TO OTHER PLANS, PROGRAMMES AND POLICY OBJECTIVES

The JMWMS sits within a framework of other policy documents which together influence both the content of the strategy and its implementation. The most important of these are described below:

- European Union legislation, most importantly the *Landfill Directive*, sets targets for reduction in the amount of biodegradable municipal waste sent to landfill. The authorities in Worcestershire and Herefordshire must meet the requirements imposed by the Directive.

- National legislation which is also binding on the local authorities, principally the *Waste and Emissions Trading Act 2003* which implements the Landfill Directive in the UK and introduces a scheme of trading in landfill allowances in order to reduce disposal of biodegradable municipal waste to landfill.

- National waste policy, in particular that set out in *Waste Strategy 2007*[1] and *Waste Not Want Not*[2], sets the framework of overarching policy objectives for Municipal Waste Management Strategies (MWMSs). The JMWMS must be aligned with these broad policy objectives such as promoting waste minimisation and implementing the waste hierarchy.

- National guidance[3] which sets out government expectations of MWMSs, including key policy objectives for waste management, the role of the JMWMS in meeting those objectives and requirements for the process which should be followed in developing the JMWMS. It lists a set of principles to be used in decision-making in regard to waste, including the

[1] *Waste Strategy for England 2007*, Department for Environment, Food and Rural Affairs, May 2007

[2] *Waste Not Want Not: A Strategy for Tackling the Waste Problem in England*, Cabinet Office Strategy Unit, November 2002

[3] *Guidance on Municipal Waste Management Strategies*, Defra, July 2005

requirement for undertaking an SEA as well as an evaluation of economic and social factors.

- Regional Planning Guidance[1] sets out policies to deal with waste arising in the West Midlands region. While being aligned with national waste policy objectives, the strategy has a specific focus on policy to deal with the specific circumstances and challenges of the region. Local authorities should take the strategy into consideration in developing MWMSs, and should seek to align their strategies with the regional strategy. The Regional Spatial Strategy Phase Two Revision[2], which will replace the waste policies in the current RPG11 and encompasses the Regional Waste Strategy, is yet to be adopted.

- The Worcestershire County Structure Plan and Herefordshire Unitary Development Plan set the planning framework for the management of waste, including municipal waste, within the two counties. The Plans set out the spatial and land use policies which will be used to govern the management of waste in each area and more specifically to control waste-related development. They therefore provide the planning framework by which the facilities to manage waste, including municipal waste, will be delivered, and as such it is important that there is consistency between the Plans and the JMWMS where relevant.

- Local Area Agreements (LAAs) for Herefordshire and Worcestershire set out the priorities for a local area agreed between central government and the Local Strategic Partnerships. Both LAAs promote the reduction of waste sent to landfill and the JMWMS should seek to support the objectives and targets of the LAAs.

- Local authorities' non-statutory strategies and plans, such as Community Strategies and Climate Change Strategies, guide the policy approach at local level on specific issues relating to the environment and sustainable development, but are not binding.

A detailed list of all relevant strategies, plans and programmes was set out in Appendix 2 of the SEA Scoping Report. Following consultation, this was supplemented with several policy documents relating to biodiversity, landscape and heritage.

[1] *Regional Planning Guidance for the West Midlands: RPG11*, Government Office for the West Midlands, June 2004

(1) [2] *West Midlands Regional Spatial Strategy Phase Two Revision – Draft: Preferred Option*, West Midlands Regional Assembly, December 2007

3.3 *SUSTAINABLE DEVELOPMENT OBJECTIVES RELEVANT TO THE JMWMS*

The appraisal framework consists of a number of sustainable development policy objectives which the JWMWS should conform with or support. The identification of objectives was achieved through a combination of the following tasks, based on best available information at the time:

- a review of the issues of relevance to Herefordshire & Worcestershire as described within existing policies, plans and programmes;
- a review of the sustainability characteristics and issues;
- analysis of the opportunities arising from the baseline data.

Each of these tasks is described in more detail in the following paragraphs.

This work was undertaken for the scoping stage of the SEA and reported in full in the Scoping Report[1]. Following consultation with key stakeholders on the Scoping Report, a number of amendments were made to the scoping information collected, specifically some additional policy documents to be reviewed, two amendments to the sustainability objectives and an amendment and an addition to the baseline data. A summary of the consultation comments received on the Scoping Report and the response to those comments is given in *Annex A*.

3.4 *REVIEW OF EXISTING POLICIES, PLANS AND PROGRAMMES*

In order to assist in identifing the environmental objectives for the SEA, a review was undertaken of the environmental policy framework relevant to Herefordshire and Worcestershire. This involved reviewing key environmental documents at international, national, regional and local level, which set the policy framework governing activities in the sub-region. The review identified the policy objectives with which waste management and planning in the sub-region must or should conform. The review also included strategies and plans relevant to economic and social policy and likely to be relevant to municipal waste management issues.

A list of policies, plans and programmes reviewed for the scoping stage was provided in *Appendix 2* of the Scoping Report. Following consultation with key stakeholders on the Scoping Report, this review was supplemented with a small number of other policy documents on biodiversity, landscape and heritage protection[2].

[1] *Sustainability Appraisal for the Joint Municipal Waste Management Strategy: Scoping Report Version 4*, Herefordshire Council and Worcestershire County Council, April 2008

[2] [2] *Council **Directive** 92/43/EEC on the conservation of natural **habitats** and of wild fauna and flora*
*Council **Directive** 79/409/EEC on the conservation of wild **birds***
European Landscape Convention

The key points emerging from the review that are relevant for the SEA in terms of policy objectives are as follows. This list was set out in the Scoping Report, with one addition (in italics) as a result of stakeholder comments on the Scoping Report.

Box 3.1 Key Objectives for the SEA

Social

(1) Access to services is a key issue, particularly for people living in rural areas.

(2) Promote and improve access to education.

(3) Enable communities to participate in and contribute to the issues that affect them.

(4) Pockets of deprivation exist in the region.

(5) Provision of decent affordable housing for all.

(6) Promote communities that are healthy and support vulnerable people.

(7) Address health inequalities.

(8) Tackle crime, fear of crime and anti-social behaviour

Environmental

(9) Encourage and enable waste minimisation, reuse, recycling and recovery, in order to meet national, regional and local targets.

(10) Prevent or reduce the negative effects of waste management on the environment.

(11) Target of 10% reduction in gas emissions that cause climate change by 2010 and 20% by 2020.

(12) Improve energy efficiency and increase use of renewable energy. 10% of the UK's electricity should be coming from renewable energy sources by 2010 and 20% by 2020.

(13) Development should be focused in, or next to, existing towns and villages with previously developed land used in preference to greenfield.

(14) Encourage and promote land use activities which will lead to an improvement in the quality of its natural resources.

(15) Development should be informed by and sympathetic to the landscape character of the locality.

(16) Protection of the natural and cultural heritage of the area.

(17) The area is subject to potential flooding from, in particular, the Rivers Severn, Teme, Avon, Stour and Wye, *and from surface run-off*.

(18) There is an emphasis on reducing the need to travel and the challenge of addressing hotspots of road congestion.

Economic

(19) Ensure prudent and efficient use of natural resources.

(20) Ensure the efficient transportation of freight within the region, so as to support a strong long economy, but not at a compromise to existing or future needs of society or the environment.

(21) On a workplace basis average earnings well below national comparators combined with a relatively low level of skilled workforce in the area.

(22) Significant proportion of workforce employed in declining industries

Heritage Protection for the 21st Century, Department for Culture, Media and Sport, March 2007

3.5 BASELINE DATA REVIEW

This section describes the significant features and conditions within Herefordshire and Worcestershire relevant to sustainable development policy and objectives. It provides an overview of the state of the environment, society and the economy in the two counties in the period preceding the adoption and implementation of the JMWMS, and indicates future trends wherever possible. The full baseline information which was used to compile this summary was given in Appendix 5 of the SEA Scoping Report. This has been supplemented with a small amount of additional data on wildlife sites in the sub-region following consultation comments on the Scoping Report.

The aim of this section of the report is to highlight any significant issues or problems that are affecting the economy, people or the environment in Herefordshire and Worcestershire, and to outline the way in which the state of the environment, society and the economy might change in the future. The purpose is to set the context within which waste management activities arising out of the JMWMS will take place, so that the significant sustainability issues and the way that municipal waste management activities might interact with those issues can be better understood. It also enables the SEA to identify and focus on those issues which are significant.

3.5.1 *Difficulties in Collecting Data*

There are substantial amounts of data available to populate a sustainability baseline for Herefordshire and Worcestershire. However, in a small number of instances data was not available. Where possible, data for the region or country as a whole has been used to indicate the likely situation in the sub-region. In some cases, no data could be found to describe the baseline situation. In particular, there is little data on likely future trends for many issues.

The detailed baseline description in the SEA Scoping Report highlights where there were deficiencies in available data or where data for the West Midlands region has been used as a substitute. Wherever trend data was available this has been included.

3.5.2 *Key Sustainability Issues and Baseline*

The key environmental and sustainability issues which have been identified through a review of baseline data are summarised in *Table 3.4*.

These key issues have been reviewed to ensure that all issues are reflected within the objectives of the appraisal framework (see *Section 3.6*).

Table 3.4 Key Sustainability Issues

Category	Key Issues	Likely evolution of baseline without implementation of the JMWMS
Waste	In 2006-07 378,607 tonnes of household waste was collected in Herefordshire & Worcestershire, comprising 30% of the total waste stream, the remainder being principally commercial and industrial waste. In that year Herefordshire recycled or composted 26% of municipal waste, less than the England average (31%), while Worcestershire recycled or composted 32%. Landfill is still the predominant method of dealing with waste, with 62% of municipal waste and 62% of commercial waste being landfilled (2002/3). Only 3% of industrial waste was landfilled in 2002/3.	There will remain a reliance on landfill. Depositing waste at landfill will become increasingly expensive, which will mean higher costs, which in turn could lead to higher council tax. The market will lead waste disposal, not the Local Authority. Increase in the growth levels of waste production across all waste streams. No opportunity to promote waste as a resource.
Climate Change	Climate change is one of the greatest long-term challenges facing mankind. The UK has adopted stretching targets to reduce greenhouse gas emissions. Of the estimated 7 million tonnes of carbon dioxide emitted in the sub-region, 3% arose from waste treatment and disposal in Worcestershire and less than 1% in Herefordshire. Methane is also a potent greenhouse gas, arising in part from waste management, although figures are not available. About 300km2 of the sub-region is likely to flood at least once in 100 years, representing 8% of the land area. The Vale of Evesham is among the driest areas of England and Wales. Other areas within the two counties may also potentially be affected by water shortages in the future.	If nothing is done to prevent an increase in amount of waste produced and if waste is not managed appropriately there will be an increase in CO2 emissions attributable to Herefordshire & Worcestershire's waste (including methane). These emissions will contribute towards increased magnitude of the effects of climatic change. If the JMWMS does not take predicted climate change into account, flooding, health and safety problems could occur or be exacerbated. e.g. increased risk of pests & disease associated with waste collection & disposal, increased fire, subsidence & instability risk on landfill.
Transport	There is relatively little traffic congestion on the road network, although there are a number of key areas of congestion including river crossings and within some urban areas. In Air Quality Management Areas (AQMAs) have been designated in Hereford and Leominster, that represent urban areas suffering from congestion where a build-up of traffic-based pollution particularly NO2 may reach levels of concern. There is poor access to national rail services in Worcestershire and poor reliability on local rail services and currently there are no major rail freight facilities located within the county.	Potential inappropriate use of road network. Congestion in and around waste disposal sites.
Growth with prosperity for all	The efficiency of Herefordshire & Worcestershire's labour market appears better in relative terms than both the West Midlands and England. The employment rate is higher than the regional and national averages.	Minimal impact.

Category	Key Issues	Likely evolution of baseline without implementation of the JMWMS
Participation by all	Over 90% of households in Worcestershire are covered by kerbside recycling services, while just under 70% of households are covered in Herefordshire.	Lessens the opportunity for promoting waste minimisation, recycling and composting.
Technology, innovations and inward investment	Employment concentration in distribution, hotels and restaurants type activity is high in Worcestershire at 27% and 30% in Herefordshire, but a much lesser proportion of the local workforce is employed in banking, finance and insurance, highlighting the precedence of small scale firms in the county's banking and services sector.	Waste innovation and inward investment with regard to waste may not be promoted if there is no JMWMS in place.
Energy generation and use	There are a number of industrial and commercial installations in Worcestershire employing wind turbines, combustion of waste materials, biogas and clean biomass. The largest remain those associated with landfill gas generation. Feasibility studies are currently being conducted that will increase current installations by approx 25MWe and 80MWt. In Herefordshire in 2006/07 planning permission was granted for a biomass power plant with a throughput of 90,000 tonnes pa of woodchip. 5 small- scale wind &/or solar developments were also approved.	Amount of energy used in Herefordshire & Worcestershire is likely to increase, especially use of fossil fuels. It is likely that opportunities to produce energy from waste will be lost. Waste collection & disposal may not be energy efficient. It is likely that opportunities to use renewable energy to power waste collection vehicles, recycling & disposal could be lost. Amount of waste produced may not be reduced. (Waste reduction is the most energy efficient method of managing waste).
Landscape	Three areas within Herefordshire & Worcestershire are designated as Areas of Outstanding Natural Beauty (AONBs), due to their recognised high landscape interest. These are the Cotswolds, the Malvern Hills and the Wye Valley.	The creation of landfill sites would continue with the associated problems of landscaping and integration into the landscape. The creation of new, pronounced landforms associated with landfill sites can generally be integrated into the landscape as 'extensions' of similar adjacent topography, providing the appropriate tree cover and hedgerow structures can be introduced to them.
Biodiversity, flora and fauna	In March 2005, 19% of Sites of Special Scientific Interest (SSSI) in Herefordshire and 72% in Worcestershire were in a good condition. There are 6 Special Areas of Conservation (SACs), 7 National Nature Reserves (NNRs) and 31 Local Nature Reserves in the sub-region, and almost 19,000 ha of ancient semi natural woodland. The local Biodiversity Action Plans provide a plan of action for 8 priority habitats and 16 priority species in Worcestershire, and 21 priority habitats and 156 priority species in Herefordshire.	Degradation of wider biodiversity interests arising from direct and indirect impacts of the waste management infrastructure.

Category	Key Issues	Likely evolution of baseline without implementation of the JMWMS
Natural Resources (air, water and soil)	Six air quality management areas (AQMA) declared due to poor air quality, all associated with busy arterial and main roads. The water quality of the majority of rivers within Herefordshire & Worcestershire are judged in good condition. Kidderminster and Bromsgrove overlie a major aquifer of high vulnerability which spreads south along the line of the Severn. The majority of land is grade 3 agricultural land classification but Herefordshire and Worcestershire also contain a high proportion of grades 1 and 2 land compared to the rest of the West Midlands region.	Without the JMWMS, facilities may be built in urban areas that may give rise to traffic congestion. This in turn could lead to air pollution. Even without the JMWMS water pollution controls would largely be met through existing environmental controls and legislation. Potential land contamination by inappropriate/illegal disposal of waste and contaminants.
Access to services	Nearly 40% of areas in Worcestershire are ranked within the top 20% most deprived areas nationally in terms of distance to basic services, while over 60% of areas in Herefordshire are within this category.	There will be no incentive for developers to include bring sites within their housing developments.
Health	The healthy life expectancy of people living in Worcestershire is approximate to the English average whereas that of Herefordshire residents is above average.	People's mental health may decrease if the environment they live in suffers from fly tipping due to insufficient infrastructure being where people can dispose of rubbish.
Provision of housing	3,075 houses are described as being overcrowded in Herefordshire and 9244 houses in Worcestershire. 1.0% of households in Herefordshire & Worcestershire do not have their own bath/shower and toile, and 16.7% do not have central heating.	No impact
Learning and skills	The proportion of the economically active population with either a Level 4 or Level 3 qualification is higher than the regional average in the sub-region, at 29% in Herefordshire and 48% in Worcestershire. The proportion with no qualifications is the same as the regional average at 12%. Employment projections show that between 2004 and 2014 it is expected there will be steady employment growth in Herefordshire and Worcestershire. Projections indicate that there will be a decline in employment within the primary sectors, including agriculture, engineering and other manufacturing and construction. However in 2007, 56% of Herefordshire's businesses responding to the Chamber of Commerce Quarterly Economic Survey, reported having trouble recruiting skilled manual/technical workers.	Without the promotion of new high technology waste management solutions, skills in this sector are unlikely to be affected.
Sustainability Issue: Cultural Heritage, built design and archaeology	Over 12,000 listed buildings, 443 Scheduled Ancient Monuments, 211 conservation areas, 2 registered battlefields, 39 historic parks and gardens, and 39,000 entries on county historic sites records. In 2005, 36 buildings of grade I and II* were classified as being at risk.	Minimal impact.

Category	Key Issues	Likely evolution of baseline without implementation of the JMWMS
Material assets (including land use & local amenity)	Construction aggregates make up most of the mineral output of Worcestershire. The known mineral resources in Herefordshire are relatively limited in range, primarily consisting of aggregates. Housing developments on previously developed land accounts for 42% of the total land take in Worcestershire and 71% in Herefordshire. The enjoyment of the countryside is a key pull factor for many visitors to Herefordshire & Worcestershire.	Use of primary aggregates will continue to increase.
Anti social behaviour, crime, litter and graffiti	There was a2.1% decrease in recorded crime in Worcestershire between 2005/06 and 2006/07. In Herefordshire the number of crimes fell by 22% between 2001-02 and 2005-06. The most common type of crime was criminal damage.	No impact.

3.5.3 *Areas Likely to be Significantly Affected*

The SEA has considered the areas likely to be significantly affected by implementation of the JMWMS, in order to identify the sustainability characteristics of those areas. In reality, the effects of implementation of the JMWMS can be considered on two levels.

First, the overall effects will be spread throughout the two counties, because waste arises almost everywhere, waste transport will occur throughout the sub-region and the some of the impacts of waste management activities will be widespread and borne by all. In this case, the relevant sustainability characteristics are those set out in the baseline above.

On another level, some of the effects of the management of waste will occur in the vicinity of waste management sites. The JMWMS does not address issues of site location, and therefore to a large extent it has not been possible in the assessment to deal with site-specific issues. The assessment has considered issues which may arise in the vicinity of sites in general, but consideration and control of issues at individual sites is the responsibility of the Waste Development Frameworks for Herefordshire and Worcestershire.

3.5.4 *EU-Designated Sites Potentially Relevant to the JMWMS*

There are five internationally designated sites within the sub-region, and there is the potential for sites to be affected by waste management activities within the two counties. The sites are listed below along with a description of the key sensitivities in relation to waste management[1].

- *River Wye SAC.* Water abstraction is a significant issue as well as water quality problems associated with sewage discharges. Possible that future abstraction of surface and groundwater may affect water levels at the site.

- *Wye Valley and Forest of Dean Bat Sites SAC.* Possible implications of land use change within foraging areas, particularly for greater horseshoe bats.

- *Wye Valley Woodlands SAC.* Site receives nitrogen deposition above critical load. Developments may exacerbate problem if they contribute to an increase in levels of NOx emissions from transport or sites. There are possible in-combination effects on land use within foraging areas for bats.

- *Bredon Hill SAC.* Vulnerable to diffuse air pollution and direct land take. Any further increase in background levels of diffuse air pollution could have cumulative effects and exacerbate an adverse situation.

- *Lyppard Grange Ponds SAC.* Vulnerable to recreational disturbance and direct land take around the ponds. Site is not likely to be affected by waste management activities.

[1] *Habitats Regulations Assessment of the Phase II Revision of the Regional Spatial Strategy for the West Midlands*, URSUS Consulting Ltd Treweek Environmental Consultants, October 2007

In addition, two sites beyond the county boundaries could potentially be affected by activities within the counties:

- *Severn Estuary SPA/cSAC/Ramsar.* Severn system is under considerable pressure for water supply. Increased abstraction has the potential to affect its qualifying features due the current and future tension between providing water supply and maintaining minimum flows.

- *River Usk SAC.* Water quality is generally good throughout the main river, although increased abstractions and low flow are a cause for concern. The Wye Valley is an important source of water transfers to South East Wales[1] and any increased abstraction from the Wye Catchment could have knock-on effects for supply to the Usk.

3.6 *APPRAISAL FRAMEWORK*

The objectives identified as part of the above processes are listed in *Table 3.5* below. The proposed strategy and relevant options were assessed against these objectives to identify and evaluate the likely effects of the strategy. Text in italics represents additions as a result of comments received on the Scoping Report.

Table 3.5 Appraisal Objectives

1. Waste
Manage the waste streams in accordance with the waste hierarchy, encouraging reuse and recovery addressing waste as a resource
To minimise the production of waste generated
2. Climate Change
Reduce causes of and adapt to the impacts of climate change
Minimise biodegradable waste going to landfill
Maximise opportunities to generate power from methane at landfill sites
3. Traffic & Transport
To reduce the need to travel and move towards more sustainable travel patterns
Ensure the disposal of waste as close to point of origin as practicable and promote transfer of waste by rail or water transport where appropriate
4. Growth with prosperity for all
Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all have access to the benefits urban and rural
To encourage business development within the waste sector to achieve Government targets for waste
To encourage rural regeneration
5. Participation by all
To provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhoods and quality of life, encouraging pride and social responsibility in the local community
To provide opportunities for communities to participate in and contribute to waste planning decisions
6. Technology, innovation & inward investment
Promote and support the development of new technologies of high value and low impact, especially resource efficient technologies and environmental technology initiatives
To make an economic gain from the recovery and treatment of waste streams wherever this is environmentally acceptable

[1] *The Wye Catchment Abstraction Management Strategy*, Environment Agency Wales, March 2008

7. Energy
Promoting energy efficiency and energy generated from renewable energy and low carbon sources
In accordance with waste hierarchy support the generation of energy from waste
8. Natural resources
Protect and improve standards of air, water and soil quality ensuring prudent use of natural resources
Minimise the creation of dust, odour and noise and other pollutants in the vicinity of waste station / facilities
9. Access to services
To improve the quality of and equitable access to local services and facilities, regardless of age, gender, ethnicity, disability, socioeconomic status or educational attainment
To improve accessibility to kerbside recycling and Household Waste Sites
10. Landscape
Safeguard and strengthen landscape character and quality
Encourage design that reduces visual intrusion and is sensitive to the local vernacular, as defined by the county landscape character assessment, *county historic landscape characterisation* and conservation area appraisals
11. Biodiversity / Geodiversity / Flora / Fauna
To conserve and enhance biodiversity and geodiversity
To assist in meeting Biodiversity Action Plan targets during the lifetime of the JMWMS
12. Health
To improve the health and well being of the population and reduce inequalities in health
To limit environmental impacts of waste treatment facilities on the local population including pest species at landfill sites
To reduce respiratory diseases/allergy related illness
13. Provision of housing
Provide decent affordable housing for all, of all the right quality and tenure and for local needs, in clean, safe and pleasant local environments
Encourage the use of sustainable building technologies in new housing developments in particular the re-use of construction and demolition waste
Promote the provision of recycling facilities within new housing developments
14. Learning and skills
To raise the skills level and qualifications of the workforce
To encourage engagement in community/environmentally responsible activities
15. Cultural heritage, architecture and archaeology
Conserve and enhance the architecture, cultural and historic environment heritage and seek well designed, resource efficient, high quality built environment in new development proposals
Promote design concepts for new buildings that are informed by the local vernacular
The siting of new waste management facilities should not have a detrimental effect on the setting and in-situ conservation of historic buildings, areas, landscapes or archaeological remains
16. Material assets
Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, lands of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space, biodiversity interest *or the historic environment*
To support the reuse of construction materials
To protect land from contamination arising from waste
To restore landfill sites to amenity purposes.
17. Crime
Reduce crime, fear of crime and antisocial behaviour
Reduce the number of fly tipping incidents
18. Flooding
Ensure inappropriate development does not occur in high risk flood areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas
Ensure development does not occur in flood risk areas

It should be noted that in the Scoping Report, the above list of appraisal objectives represented a prioritisation of the objectives in order of numbering

with 1 the highest priority and 18 the lowest. However, this was a cause of concern for some stakeholders who were consulted on the Scoping Report, as some objectives had been assigned a low priority and this was felt to be incorrect. It was decided that, for the appraisal of the JMWMS, the concept of prioritisation of objectives should be removed. The reason for this is that the SEA Directive requires the appraisal to be based on an assessment of the significance of the *effects* of the JMWMWS, rather than the relative importance or significance of the objectives.

Appraisal of Options

3.7 INTRODUCTION

This section sets out the results of the appraisal of minimisation, recycling and residual treatment options, showing the assessment of the effects of each of the options against the objectives of the appraisal framework. It summarises the key findings which have emerged from the appraisal where significant effects are predicted.

The following symbols have been used to indicate the broad nature of the predicted effect:

+	effect likely to be positive
-	effect likely to be negative
0	no significant effect
?	effect unknown

Multiple symbols have been used (eg ++) to indicate a different scale of impact relative to the other options, in other words where the impacts of an option are *significantly* better or worse than others.

The *Tables* include an assessment of where particular options perform notably well relative to the other options:

	Option performs well relative to the others

3.8 MINIMISATION OPTIONS

3.8.1 *The Options*

In Herefordshire and Worcestershire, a range of initiatives are already in place for minimising the amount of waste generated in the two counties. In considering further options for waste minimisation, the Joint Forums have therefore examined the potential for enhancements to the current initiatives to achieve improved performance. The aim is to identify where resources can be focused in order to achieve the best overall result.

Enhancements were considered for the following initiatives:

- Home composting
- Food waste reduction campaign
- Re-use initiatives
- Promoting sink disposal units
- Home shredding service for green waste
- Junk mail reduction campaign
- Real Nappy Project and Real Nappy Incentive Scheme
- Waste collection policies e.g. side waste restrictions

3.8.2 Appraisal Results

Table 3.6 shows how the different options perform against those appraisal objectives where there is a significant effect. For several of the objectives, the minimisation options have no effect or the effect would be insignificant.

The results show that enhancement of home composting activity (option A) would produce the greatest benefits against a large number of sustainable development objectives. It will enable the greatest degree of minimisation, allowing the greatest reduction in waste transport and in landfill of biodegradable waste. This scheme involves the greatest amount of participation by the public, and by making alternative soil improvers available it will reduce consumption of natural resources and may help to increase biodiversity. Finally, it is estimated to provide the greatest economic gain.

Additional efforts to minimise the amount of food waste (option H) would also provide a significant range of benefits, although not to the same degree as home composting. It produces the second highest reduction in waste, reducing the need for waste transport and landfill, while also providing a large economic gain.

The performance of the other proposed service enhancements are more mixed. Enhancing reuse initiatives (option G) provides good opportunities for participation and access to services, and while it provides a degree of minimisation, it has a small net cost and is outperformed by other options against other sustainability criteria. Preventing junk mail (option E) and promoting smart shopping (option F) provide a similar level of minimisation to option G, while also helping to reduce waste transport and landfill of biodegradable waste and also providing an economic gain.

It is recommended that resources are focused as a priority on enhancing home composting and food waste reduction initiatives, with some additional effort directed to increasing junk mail prevention and promoting smart shopping as a secondary priority. Enhancing reuse initiatives could also be promoted as a third priority for their social benefits.

Table 3.6 Significant Effects of Minimisation Options

Appraisal objectives:	A Home composting	B Real nappies	C Sink Your Waste	D Home shredding	E Junk mail prevention	F Smart shopping	G Reuse initiatives	H Food waste	Comments
Implement the waste hierarchy	+++	+	+	+	++	++	++	+++	Option A provides the greatest opportunities to minimise waste, and option D the smallest. All options will achieve a smaller degree of minimisation in the short term.
Reduce causes of climate change	+++	++	++	++	++	+	0	+++	All options will reduce the emissions of CO_2 from waste transport, and from landfill (with the exception of option G). Options A and H will minimise emissions.
Minimise landfill of biodegradable waste	+++	+	+	+	+	+	0	++	Options A and H give the greatest minimisation of landfill of biodegradable waste, although most options provide some reduction with the exception of option G.
Reduce the need to travel	+++	+	+	+	+	++	0	++	Options A, H and F contribute the greatest to reducing the need for waste transport by minimising the amount of waste to be collected. Option G will not remove the need for waste transport, and option B may not depending on the type of reuse schemes adopted by parents.
Make economic gain from waste	+++	-	+	-	+	++	-	+++	Options A and H provide the greatest estimated overall economic gain, followed by options F and E. Options B, D and G each have a small net cost.
Prudent use of natural resources	++	0	0	+	+	+	+	+	Green waste recycling will help to conserve natural resources by producing alternative soil improvers.
Improve access to services	0	0	0	+	0	0	++	0	Options D and G will make a small contribution to improving access to waste services. Option G can help to improve access to low-cost goods for disadvantaged individuals, groups, schools and charities.
Conserve and enhance biodiversity	+++	+	+	+	+	+	0	++	Increased composting will increase the availability of alternative soil improvers, so helping to reduce peat use and possibly improving garden biodiversity.
Encourage engagement in environmentally responsible activities	++++	+++	++	+	+++	+++	++++	+++	Options A and G provide the greatest opportunities to encourage engagement in responsible activities, by enabling, engaging, encouraging and exemplifying environmentally responsible behaviour.

3.9 RECYCLING OPTIONS

3.9.1 The Options

Existing recycling services in Herefordshire and Worcestershire consist of a range of kerbside collection services in the different authorities, including some green waste and food waste collections, together with recycling at bring sites and at Household Waste Sites. The recycling and composting options looked at different ways of enhancing those services, by combining the following service enhancements in different ways and comparing them to current service performance levels:

- Full core kerbside recycling service, involving collection of glass, paper and card, foil, cans and plastics across all authorities;
- Green waste collection in Bromsgrove;
- Paid-for green waste collection everywhere;
- Food waste collection in Wychavon;
- Food waste collection everywhere;
- Recycling street sweepings.

The following options have been devised:

Table 3.7 Recycling Options

	A	B	C	D	E	F	G	H	I
Status quo – current service levels	✓								
Full core kerbside recycling service		✓	✓	✓	✓	✓	✓	✓	✓
Green waste collection in Bromsgrove		✓							
Green waste collection everywhere			✓			✓	✓		✓
Food waste collection in Wychavon									✓
Food waste collection everywhere				✓		✓			
Recycling street sweepings					✓	✓	✓		✓

3.9.2 Appraisal Results

Table 3.8 shows how the different options perform against those appraisal objectives where there is a significant effect. For several of the objectives, the recycling options have no effect or the effect would be insignificant.

The option which includes the widest possible range of services (option F) secures most sustainability benefits, principally deriving from the recycling of significantly greater tonnages of biodegradable waste than other options, with collections of green and food waste across the whole of the two counties. However, it is expected to incur significant additional costs for food waste collections with additional vehicle fleet and manpower requirements.

Of the options which exclude area-wide food waste collections, options which have area-wide green waste collections (options C, G and I) secure more benefits overall than other options because of increased tonnages of waste recycled, principally biodegradable waste. Option I performs slightly better than option G due to the additional food waste collection in Wychavon which

secures slightly greater reductions of biodegradable waste, although this also has additional costs with additional vehicle fleet and manpower requirements.

It is worth noting that option D, the other option which includes food waste collection apart from F, does not achieve significantly greater benefits than options C, G or I.

Table 3.8 Significant Effects of Recycling Options

Appraisal objectives:	A Status quo	B Core + Broms green	C Core + paid green	D Core + food	E Core + street	F Core + paid green + food + street	G Core + paid green + street	H Core, no green	I Core + paid green + street + Wych food	Comments
Implement the waste hierarchy	+	++	++	++	++	+++	++	+	++	Option F recycles 38% more waste than the status quo. The next best performer is option I which recycles 25% more than the status quo (food collection only in Wychavon).
Minimise waste production	0	++	++	0	++	0	++	++	+	Options without a food collection will include schemes to encourage additional waste minimisation.
Reduce causes of climate change	+	++	++	++	++	+++	++	+	++	Options with higher recycling levels will contribute more to reducing greenhouse gas emissions through greater resource efficiency, although the difference in tonnages will mean a small difference in climate effects.
Minimise landfill of biodegradable waste	0	+	++	++	0	+++	++	0	++	Option F diverts 70% more biodegradable waste from landfill than the next best performing option (D), and over twice as much as option I (food collection only in Wychavon).
Encourage business development	0	+	+	++	+	++	+	+	++	Increased core recyclables collection services and food collection will indirectly help to encourage new businesses in waste recycling/processing.
Support development of new technologies	+	+++	+++	+++	++	+++	+++	++	+++	All options will indirectly help to promote technologies which increase resource efficiency, although these are not usually either high value or low impact. The main benefits will arise from increased core recyclables collections and diversion of biodegradable waste from the waste stream.
Make economic gain from waste	-	---	---	-----	--	-----	---	--	----	All basic collection services have a cost, however figures are not available for the expected cost of the various new services. Green waste collections will have some cost-recovery, although will still involve some costs to the counties. Food waste collections will involve significant cost by requiring additional fleet and manpower, estimated at 50% increase in costs. Recycling of street sweepings will involve minimal additional cost.
Prudent use of natural resources	0	+	++	++	0	+++	++	0	++	Green waste recycling will help to conserve natural resources by producing alternative soil improvers.
Improve access to services	0	++	++	+++	+	++++	++	+	++	All options apart from the status quo will increase kerbside recycling services. Food waste collections aim to secure 55% participation while green waste recycling will achieve around 10% participation.
Conserve and enhance biodiversity	0	+	++	++	0	+++	++	0	++	Increased recycling of green and food waste will increase the availability of alternative soil improvers, so helping to reduce peat use.
Encourage engagement in environmentally responsible activities	+	++	++	++	++	++	++	++	++	Provision of kerbside collection services encourages engagement in environmentally responsible activities. Additional core recyclables collections will increase basic participation, although additional collections of food and green waste are not likely to increase the number of households participating in recycling activities in addition to those separating recyclables for core services.

3.10 RESIDUAL TREATMENT OPTIONS

3.10.1 The Options

For residual waste treatment, a long list of generic technology types was considered, taking account of the range of possible technologies at various stages of development and implementation worldwide. This was then narrowed down taking account of the likely deliverability and appropriateness of the various technologies for the particular context in Herefordshire and Worcestershire.

In addition, consideration was given to the potential number and scale of facilities, in particular the possibility of delivering a residual treatment solution with smaller facilities on more than one site. An option for three or more facilities was dismissed as it was not considered appropriate for the capacity required in terms economies of scale and the risks associated with site availability and deliverability.

Currently the Partnership export residual waste to EfW facilities in the West Midlands. There are a number of operating and planned waste treatment facilities in the areas surrounding Worcestershire and Herefordshire. It was therefore deemed necessary to assess an option that utilises waste treatment capacity outside the Partnership area. This option was subjected to a sensitivity test to determine the extent to which its performance was affected by the nature of EfW plant rather than its location.

The final options considered for residual treatment technology are set out in the table below.

Table 3.9 ***Residual Treatment Technology Options***

Option	Description
A	1 site Energy from Waste (EfW)
B	1 site EfW with Combined Heat and Power (CHP)
C	2 site Mechanical Biological Treatment with on-site combustion
D	2 site Mechanical Biological Treatment with off-site combustion
E	1 site autoclave
F	2 site autoclave
G	Out of county EfW
G2	Out of county EfW (alternative plant type)

3.10.2 Appraisal Results

Table 3.10 shows how the options compare in terms of relative performance to each other, for those appraisal objectives where the effects are significant and help to differentiate between the options. It should be noted that each of the technology options perform well against some objectives and less well against others, but that no one option performs better than the others consistently for all objectives.

However, the results show that a residual waste solution based on Energy from Waste with CHP (option B) provides the greatest sustainability benefits

in comparison to the other options, maximising performance against the waste hierarchy and minimising the landfill of biodegradable waste, while providing the greatest reduction of greenhouse gas emissions and also enabling the generation of renewable energy. It will also minimise the requirements for onward transport of process outputs. Whilst it does not offer a solution with the lowest total costs, it compares reasonably favourably to other options on cost.

The overall environmental burden will be reduced with option B, although not by as much as with autoclave (options E and F) or MBT (options C and D). Local emissions may give rise to environmental effects with all options, including effects on vegetation and ecosystems, but these could be minimised with autoclave or MBT technologies. However, the significance of any effects is strongly dependent on choice of location and on operational standards.

An option whereby waste is exported out of Herefordshire and Worcestershire to an EfW plant does not provide any benefits over and above those provided by EfW within the sub-region, and performs less well against a number of the appraisal objectives.

A solution involving autoclave technology will maximise performance against the waste hierarchy to a similar degree as EfW with CHP, while minimising the risk to the environment from emissions. However, autoclave performs less well against a number of other objectives including transport, climate change and energy generation.

Mechanical Biological treatment performs less well than either EfW or autoclave, and the effects vary depending on whether the output is burnt on- or off-site. However, like autoclave, it minimises the risk to the local environment from emissions.

Table 3.10 Significant Effects of Residual Treatment Options

Appraisal objectives	A: 1 site EfW	B: 1 site EfW with CHP	C: 2 site MBT (on site combustion)	D: 2 site MBT (off site combustion)	E: 1 site autoclave	F: 2 site autoclave	G: Out of county EfW	G2: Out of county EfW (sensitivity test)	Comments
Implement the waste hierarchy	++	+++	+	+	+++	+++	++	++	Options B, E and F perform best in terms of managing waste as high up the hierarchy as possible. Options C and D perform least well.
Reduce causes of climate change	+	+++	+	++	++	++	+	+	Option B makes the greatest contribution to reducing greenhouse gas emissions, with the largest net negative balance of all the options. Option G has a significant positive balance of greenhouse gas emissions, however all options are likely to reduce emissions of greenhouse gases from waste management, because of the increased levels of recycling and recovery involved.
Minimise landfill of biodegradable waste	+++	+++	+	+	++	++	+++	+++	Options A, B, G and G2 minimise the landfill of biodegradable waste. All options would meet the joint Herefordshire and Worcestershire LATS targets for 2020.
Reduce the need to travel	-	-	--	--	--	---	--	--	Options A and B require the smallest amount of waste transport, because they involve the smallest amount of onward transport of outputs to other destinations. Option F requires a relatively large amount of waste transport because of the large amounts of recyclate to be transported from more than one facility. NB current levels of waste transport are unknown, but all options are likely to increase waste transport because of the need for onward transport of process outputs.
Ensure disposal close to origin	+	+	+	-	n/a	n/a	-	-	Neither options D, G or G2 will ensure disposal of waste as close to its origin as practicable, as it will be exported out of the sub-region for combustion. NB this assumes the definition of disposal to include EfW.
Economic gain	+++	++	+	+	++	++	++	++	Option A has the lowest total cost and options C and D the highest. However, figures do not include any income generated as it is impossible to make reliable future predictions.
Promote renewable energy generation	0	++	+	0	0	0	0	0	Option B will qualify for more Renewables Obligation Certificates than option C. No other options will generate energy which qualifies, other than from landfill gas. However, this will reduce over time with the increased diversion which each option allows, and furthermore the eligibility of landfill gas for ROCs will also reduce.
Support energy generation from waste	++	+++	++	+++	+	+	++	++	Option D recovers the most energy, closely followed by option B. These two recover significantly more energy than the other options.
Protect and improve environmental quality	-	+	++	++	+++	+++	--	--	Options E and F make the largest contribution to improving environmental standards, as they produce the largest net reductions in aquatic ecotoxicity, eutrophication and acidification. Options C and D also have a relatively large net reduction in aquatic ecotoxicity and acidification, but increase eutrophication. Options A, G and G2 are net contributors to acidification as well as eutrophication.

Appraisal objectives	A: 1 site EfW	B: 1 site EfW with CHP	C: 2 site MBT (on site combustion)	D: 2 site MBT (off site combustion)	E: 1 site autoclave	F: 2 site autoclave	G: Out of county EfW	G2: Out of county EfW (sensitivity test)	Comments
Minimise local emissions	- -	- -	-	- - -	-	-	- - -	- -	Options C, E and F produce the lowest levels of NOx and PM10s, minimising the emission of these key pollutants in the vicinity of waste facilities. Options D and G produce the highest levels of emissions.
Conserve and enhance biodiversity	- -	- -	-	- -	-	-	- - -	- -	Options C, E and F minimise emissions of nitrogen oxides, which in some parts of Herefordshire and Worcestershire are predicted to be above the standard for the protection of vegetation and ecosystems in 2010. Option G produces significantly higher levels of NOx emissions than the other options, although not all of these will be emitted in Herefordshire and Worcestershire.

4 APPRAISAL OF DRAFT HEADLINE STRATEGY

4.1 INTRODUCTION

This section sets out the results of the appraisal of the draft Headline Strategy as at 26 January 2009. It summarises the results of the assessment of principles, policies and targets, making a prediction of the likely effects of the draft strategy. Recommendations are made where appropriate for amendments to the strategy in order to mitigate the likely negative effects or maximising the opportunities for benefits.

4.2 APPRAISAL OF PRINCIPLES

4.2.1 Process

Government guidance recommends that the SEA should undertake a compatibility analysis between the aims of the draft Headline Strategy and the SEA appraisal objectives. This has been undertaken and the results are set out in detail in *Annex B* and summarised here.

The purpose of the exercise is to determine whether the objectives of the draft Headline Strategy will contribute to sustainable development, and to identify any potential incompatibilities between the principles of the strategy and sustainable development policy objectives. To do this, the principles have been compared with each of the SEA appraisal objectives and an assessment made of the likelihood that the draft Strategy will contribute to the achievement of each objective for sustainable development.

4.2.2 Results

There are a small number of incompatibilities between the principles of the draft Strategy and the appraisal objectives, although it is not recommended that any action is taken to address this. Specifically, reducing the landfill of biodegradable waste will reduce opportunities to generate energy from landfill gas. However, diversion from landfill should not be avoided because diversion gives rise to a number of benefits.

There are a number of areas of uncertainty arising out of the compatibility assessment. The main reason for this is that the appraisal objectives are more detailed and specific than the principles of the Strategy, which are expressed in more general terms. It is therefore not known whether or not there are likely to be specific sustainability impacts. It is only possible to make a meaningful appraisal by assessing the detailed policies and targets of the Strategy. Amendments to the overarching principles are therefore not recommended. The areas of uncertainty specifically relate to transport impacts, energy recovery, and specific environmental impacts including biodiversity, historic assets, landscape and other land-based assets.

There are a number of sustainability objectives which are not dealt with or affected in any foreseeable way by the strategic principles, but in each case the objectives are largely outside of the scope of the JMWMS and therefore no recommendations are made for additional principles to cover these objectives. These relate to design issues, Biodiversity Action Plan targets, the provision of decent and affordable housing, use of sustainable construction techniques, raising workforce skills and qualifications and restoration of landfill sites.

4.3 *APPRAISAL OF POLICIES AND TARGETS*

The detailed policies and their associated targets have been appraised against the framework of sustainable development objectives, taking into account the additional information provided in the supporting text as context to the policies. Results, policy by policy, are set out in *Annex C*.

The following symbols have been used to indicate the broad nature of the predicted effect:

+	Effect likely to be positive
-	Effect likely to be negative
0	No significant effect
?	Effect unknown
Ø	Not relevant

An assessment is also made of the significance of effects based on a number of criteria (see *Section 2.3*), and is indicated by colour:

	Not relevant
	No significance
	Medium significance
	High significance

A summary of the overall effects of implementing the draft Headline Strategy is set out in *Table 4.1*, and recommendations made for mitigating negative effects or maximising opportunities for benefits.

4.3.1 *Summary of Results*

The Strategy has a very strong commitment to promoting the waste hierarchy, with a range of policies and targets addressing all aspects of the hierarchy. This will enable it to promote greater resource efficiency and to contribute to a reduction in greenhouse gas emissions from waste management activity, which will be partially reinforced by the adoption of a target for emissions from collection. As a component of the hierarchy, energy recovery will be promoted in preference to landfill, although no particular commitments are made to energy recovery in the Strategy.

In order to achieve the waste hierarchy, the Strategy will seek to improve access to waste services and promote greater public participation in environmentally responsible activities. It will also indirectly support business

growth in the waste sector and the development of new resource-efficient technologies.

The effect of the Strategy on traffic and transport is unclear. Increased recycling and recovery could lead to greater waste transport distances, as it will increase the tonnages of recyclables to be delivered to appropriate facilities and will also increase the onward transport of process outputs. Conversely, better waste minimisation will help to reduce the need for transport. The Strategy has a clear commitment to minimise the amount of waste transport required, although it lacks detail in the supporting text as to how this is likely to be achieved. Greater certainty could be provided with information about the steps to be taken to achieve the aim of fewer 'waste miles'.

Promoting recovery of resources from waste will require construction of new facilities, particularly treatment facilities which are likely to be within Herefordshire and Worcestershire. This will increase emissions in the vicinity of facilities and may have effects on environmental and historic assets. The significance of these impacts is unknown and depends strongly on local conditions, on planning and development control and on operational standards, factors which are outside the scope of the JMWMS.

4.3.2 Recommended Mitigation

It is recommended that to address the predicted adverse effects of the JMWMS and to capitalise on opportunities for benefits, the following additional measures are included either through new policy or through commitments within the supporting text.

- *Transport and accessibility*. The supporting text to the transport policy should clarify that waste miles will be reduced by the appropriate choice of location for facilities, by promoting local recycling/composting and treatment capacity where this is practicable and by seeking to use alternatives to road where practicable. Bring facilities should be located close to centres of population and other local facilities, and the strategy should commit to ensuring good accessibility to Household Waste Sites across the two counties, providing new sites where required.

- *Commercial sector engagement*. The strategy should give a clearer commitment to commercial sector engagement, both producers and processors. In particular, there should be a clear policy to promote increased recycling by commercial waste producers, as well as support and engagement with waste processors.

- *Energy recovery*. Include policy or supporting text to promote energy recovery wherever practicable, including from landfill gas.

- *Fly-tipping*. The strategy should include measures to reduce fly-tipping, for example by making reference to such measures in supporting text.

The effects of the JMWMS on a number of objectives is unclear, because these are dependent on the location and design of facilities which are outside the scope of the JMWMS. Appropriate steps are required to ensure that land use plans in Herefordshire and Worcestershire take account of the following issues in the location and design of facilities and prevent adverse impacts:

- Local environmental conditions and effects on air, water and soil.
- Landscape impacts
- High standards of design.
- Potential biodiversity sensitivities
- The historic environment, historic assets and their setting.
- The environmental value of land
- Flood risk and resilience.

In addition, Environmental Impact Assessments to accompany planning applications must assess the impacts of air emissions and disturbance on biodiversity.

Table 4.1 Summary of Significant Effects of Draft Headline Strategy

Appraisal objectives	Assessment		Mitigation
Promoting the waste hierarchy	+	The Strategy has a very strong commitment to promoting the waste hierarchy, with a range of policies and targets addressing all aspects of the hierarchy.	None
Reducing the causes of climate change	+	The Strategy has a clear commitment to reducing greenhouse gas emissions from waste management activities. It will achieve this through greater prevention, reuse, recycling and treatment, and by adopting a target for reducing emissions from waste collection. The Strategy also commits to minimising waste miles which will reduce greenhouse gas emissions from transport, and it will also reduce the landfill of biodegradable waste through prevention and recycling measures. It does not require energy generation from landfill gas, however this is already required by the Environment Agency unless there are exceptional circumstances.	None
Reducing traffic and transport	?	Through increased waste prevention the Strategy will reduce the need for waste to be transported. However, increased recycling and treatment may result in greater amounts of waste transport overall as it will increase the tonnages of recyclables to be delivered to appropriate facilities, and also increases the onward transport of process outputs. The Strategy has a clear commitment to minimise the amount of waste transport required, although it lacks detail in the supporting text as to how this is likely to be achieved.	The supporting text to the transport policy should clarify that waste miles will be reduced by the appropriate choice of location for facilities, by promoting local recycling/composting and treatment capacity where this is practicable and by seeking to use alternatives to road where practicable. Bring facilities should be located close to centres of population and other local facilities.
Encouraging business development	+	There is a clear commitment to working with other organisations such as the voluntary and community sectors and contractors in order to support markets for recycled products. The Strategy will also indirectly support business development by increasing the need for waste management facilities to be provided. It also encourages reuse and recycling by the commercial sector, although it is not clear whether this will be directed at waste producers or waste processors. The supporting text indicates that the councils will seek greater recycling by the commercial sector.	The strategy should give a clearer commitment to commercial sector engagement, both producers and processors. In particular, there should be a clear policy to promote increased recycling by commercial waste producers, as well as support and engagement with waste processors.
Participation in decision-making	0	The Strategy is unlikely to significantly affect public participation in decision-making, although this is largely outside its remit. However, adopting a transparent approach to performance monitoring may indirectly support community participation in decision-making by providing knowledge and information in support of that.	None
Promoting new technologies	+	Moving the management of waste up the waste hierarchy is likely to require new economic enterprises in waste recycling and treatment within the counties and elsewhere. This may help to support the development of new methods of managing waste which will enable greater resource efficiency, and to make an economic gain from marketing recycled products. It may also allow LATS permits to be sold, enabling an economic gain to be	The strategy should give a clearer commitment to commercial sector engagement, both producers and processors. In particular, there should be a clear policy to promote increased recycling by commercial waste producers, as well as support and engagement with waste

Appraisal objectives	Assessment		Mitigation
		made from the recovery and treatment of waste. The Strategy also encourages reuse and recycling by the commercial sector, although it is not clear whether this will be directed at waste producers or waste processors. If waste processors, then this may help to promote the development of new technologies.	processors.
Energy efficiency and generation	?	The Strategy commits to the waste hierarchy, including the promotion of energy recovery in preference to landfill. In addition, promoting greater waste minimisation will help to reduce the demand for energy for waste transport and processing. However, there is no other reference to the recovery of energy where practicable. In order to achieve the targets for recovery and to reduce CO_2 emissions the strategy may promote energy recovery, although this is not explicit.	Include policy or supporting text to promote energy recovery wherever practicable, including from landfill gas.
Protecting natural resources	+/?	Promoting the waste hierarchy will help to promote more sustainable use of natural resources by reducing the demand for virgin materials and avoiding the need for extraction and processing. Greater minimisation, reuse and recycling may also help to reduce the risk of pollution in the vicinity of waste management facilities although this is more strongly dependent on operational standards. However, promoting recovery of resources from waste will require construction of new treatment facilities which are likely to be within Herefordshire and Worcestershire, which will increase emissions in the vicinity of facilities. The significance of the impacts of these emissions depends on local conditions and on operational standards. Some areas particularly within Bromsgrove and Wychavon have poor air quality that exceeds standards for NOx for protection of vegetation and ecosystems.	Ensure that the location and design of waste treatment facilities takes account of local environmental conditions and prevents adverse impacts on air, water and soil.
Improving access to services	+	The Strategy contains a range of commitments which will improve the quality and accessibility of services, including waste minimisation, kerbside recycling and bring sites. Household Waste Sites are likely to provide improved facilities although their accessibility is unlikely to change. Implementing minimisation initiatives will also increase access to low-cost goods for disadvantaged individuals, groups, schools and charities. However, the Strategy also plans to restrict residual waste collection services which can be perceived as a reduction in service availability.	The strategy should commit to ensuring good accessibility to Household Waste Sites across the two counties, providing new sites where required.
Protecting landscape	?	Increasing recycling and recovery will require new waste management facilities to be constructed. These may have effects on landscape character, depending on where they are located and standards of design. However, this is principally a matter for planning and development control.	Ensure land use plans take account of landscape impacts in identifying locations for facilities and require high standards of design.
Conserving and enhancing biodiversity	+/?	Reducing the need for landfill by implementing the waste hierarchy will help to reduce the risk of water pollution which may have local benefits for aquatic biodiversity, although this is also dependent on operational standards. Increased home composting may help to increase garden biodiversity. However, developing new recycling and residual treatment	Potential biodiversity sensitivities should be taken into account in selection of suitable sites, and EIAs should assess the impacts of air emissions and disturbance on biodiversity.

Appraisal objectives	Assessment		Mitigation
and geodiversity		capacity may have adverse impacts in terms of increased air emissions and landtake, although the significance of effects is unknown and dependent on locations and types of technology employed. Higher tonnages sent for recycling and treatment is also likely to increase emissions from waste transport, although this is unlikely to be significant in terms of transport overall in Herefordshire and Worcestershire. Some areas particularly within Bromsgrove and Wychavon have poor air quality that exceeds standards for NOx for protection of vegetation and ecosystems.	
Protecting and improving health	+	By aiming to move waste management up the hierarchy, the strategy is likely to ensure any risks to human health are minimised by reducing the quantity of waste requiring disposal. New recycling and treatment facilities will need to be constructed, however exposure to risks is unlikely to be significant and it is primarily dependent on operational standards at individual facilities. Current pollution control techniques and standards should ensure that developments pose a very small or no risk to human health.	None
Promoting facilities within new developments	+	The Strategy explicitly seeks to provide minimisation and recycling facilities in new developments. This could incorporate bring sites, although this is not explicitly promoted by the policy.	Supporting text to policy 21 could promote the location of bring sites within larger developments. The Strategy could also seek the provision of facilities in commercial developments.
Raising skills and encouraging participation	+	Promoting more minimisation and recycling and improving the quality and accessibility of services will require the councils to encourage engagement in environmentally responsible activities, and this is actively promoted by the Strategy. In addition, by supporting reuse of goods and materials, the policy can make an indirect contribution to developing skills in product reconditioning and refurbishment. The adoption of sustainable procurement will help to promote more environmentally responsible activities by council staff, and potentially also by suppliers.	None
Protection of built and historic environment	?	Achieving the targets for recovery will require new treatment facilities to be constructed within Herefordshire and Worcestershire. It may also require new recycling and composting facilities including bring sites. New facilities and sites could have a detrimental effect on the historic environment and landscapes depending on where they are situated and standards of design and construction. However, this falls within the remit of planning and development control.	Ensure planning policy takes appropriate account of the historic environment in location and design and that sites and facilities do not negatively affect historic assets or their setting.
Efficient use of land-based assets	?	By reducing the landfill of waste, the policy will ensure the most efficient use of landfill space, which will help to protect land-based assets in the two counties. Increased recovery will require new facilities to be constructed but these will have a much smaller footprint than landfill sites. A new facility could have effects on land-based assets such as green belt or on use of previously developed land, but this depends on location and design which are principally a matter for planning and development control.	Ensure land use plans take account of the type and value of land in identifying locations for facilities and require high standards of design.

Appraisal objectives	Assessment		Mitigation
Reducing fly-tipping	?	By providing improved quality of some services such as at Household Waste Sites and to continue to provide bulky waste collections and promote their use, the Strategy may help to reduce the incidence of fly-tipping. Promoting awareness of waste issues may also indirectly help to reduce fly-tipping by changing attitudes to waste and its impacts. However, restricting residual waste collections may increase the incentive for householders to fly-tip waste.	The strategy should include measures to reduce fly-tipping, for example by making reference to such measures in supporting text.
Avoiding flood risk	?	Reducing the landfill of waste by increasing recovery will require new treatment facilities to be built. The location of this may affect flood risk depending on location and standards of design but this is a matter for planning and development control.	Ensure land use plans take account of flood risk in identifying locations for facilities and require high standards of design.

5 MONITORING

5.1 PROPOSALS FOR MONITORING AND INDICATORS

Table 5.1 contains recommendations for monitoring the significant effects of implementation of the JMWMS. These indicators should be included within a programme of annual monitoring to allow the Partnership to identify the impact of implementing the strategy and to respond if necessary to any adverse impacts. This should be integrated wherever feasible and practicable with other waste monitoring programmes by the partners, for example on minimisation and recycling activities, to enable the wider context to be understood.

Monitoring of strategy implementation should focus on its effectiveness in several key areas:

- the achievement in managing waste at levels of the waste hierarchy, including in relation to past performance to show improvement;
- the effects on waste transport in terms of waste distances and vehicle movements;
- access to and participation in reuse and recycling/composting services;
- reporting on the councils' waste-related activities, including costs and effectiveness.
- the capacity of recycling, composting and treatment facilities in Herefordshire and Worcestershire
- the performance of treatment and disposal facilities, including impacts of activities and energy generation.

Table 5.1 Recommendations for Monitoring

Policy	Recommended monitoring indicators
Policy 1: Waste Hierarchy	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • arisings • recycled/composted • sent for treatment • used to recover energy • disposed to landfill • MW of energy generated from residual treatment and landfill Waste transport: • Vehicle movements • Tonne-km travelled
Policy 2: Value for Money	Report on annual cost of waste management services, by type of service, total and per tonne of MSW
Policy 3:	Tonnes of MSW managed at different hierarchy levels, including trends to

Policy	Recommended monitoring indicators
Customer Needs	show performance improvement: • arisings • recycled/composted Waste transport: • Vehicle movements • Tonne-km travelled % of households covered by collection services, by type of recyclable.
Policy 4: LAA Targets	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Arisings, total and per head • recycled/composted • sent for treatment • used to recover energy • disposed to landfill
Policy 5: Sustainable Procurement	Report on in-house waste management and procurement practices
Policy 6: Performance Monitoring	No specific indicators
Policy 7: Climate Change	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • arisings • recycled/composted • used to recover energy • BMW disposed to landfill • MW of energy generated from residual treatment and landfill Waste transport: • Tonne-km travelled
Policy 8: Core Collection Service	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • arisings • recycled/composted • BMW disposed to landfill Waste transport: • Vehicle movements • Tonne-km travelled % of households covered by collection services, by type of recyclable No. of fly-tipping incidences
Policy 9: Waste Reduction Initiatives	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • arisings Report on levels of participation in minimisation schemes, by type of scheme
Policy 10: Green and Kitchen	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement:

Policy	Recommended monitoring indicators
Waste	• arisings • BMW disposed to landfill Report on levels of participation in green and kitchen waste minimisation schemes, by type of scheme
Policy 11: Producer Responsibility	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Arisings by type of material (packaging)
Policy 12: Reuse	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Reuse Report of activities with third sector and contractors to promote reuse, including expenditure and types of organisations supported.
Policy 13: Achieving Targets	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Arisings, total and per head • recycled/composted • sent for treatment • used to recover energy • disposed to landfill • BMW disposed to landfill Waste transport: • Vehicle movements • Tonne-km travelled % of population living within 10km of Household Recycling Centre % of population living within 1km of bring facility Capacity of waste management facilities in H&W: recycling, composting, residual treatment Report on facilities compliance with consent conditions, including air emissions and water discharges Report on levels of participation in reuse and recycling schemes, by type of scheme
Policy 14: Bring Sites	Tonnes of MSW deposited at bring sites Waste transport: • Vehicle movements • Tonne-km travelled % of population living within 10km of Household Recycling Centre % of population living within 1km of bring facility
Policy 15: Household Recycling Centres	Tonnes of MSW recycled/composted at Household Recycling Centres Waste transport: • Vehicle movements • Tonne-km travelled % of population living within 10km of Household Recycling Centre No. of fly-tipping incidences
Policy 16: Waste	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement:

Policy	Recommended monitoring indicators
Treatment	• sent for treatment • used to recover energy • BMW disposed to landfill Waste transport: • Vehicle movements • Tonne-km travelled Report on facilities compliance with consent conditions, including air emissions
Policy 17: Disposal	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • disposed to landfill • BMW disposed to landfill • MW of energy generated from landfill Report on facilities compliance with consent conditions, including air emissions and water discharges % of households covered by collection services, by type of recyclable % of population living within 10km of Household Recycling Centre % of population living within 1km of bring facility Waste transport: • Vehicle movements • Tonne-km travelled
Policy 18: Awareness Raising	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Arisings, total and per head • Reuse • recycled/composted • BMW disposed to landfill Waste transport: • Vehicle movements • Tonne-km travelled % of households covered by collection services, by type of recyclable % of population living within 10km of Household Recycling Centre % of population living within 1km of bring facility Report on levels of participation in reuse and recycling schemes, by type of scheme No. of fly-tipping incidences
Policy 19: Promotions	Report on levels of participation in reuse and recycling schemes, by type of scheme
Policy 20: Commercial and VCS Reuse and Recycling	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Reuse • recycled/composted Tonnes of C&I waste recycled/composted, with trends to show performance improvement

Policy	Recommended monitoring indicators
	Waste transport: • Vehicle movements • Tonne-km travelled No. of waste processors/handlers in H&W, by type of operation and whether commercial/VCS Report on levels of participation in reuse and recycling schemes, by type of scheme
Policy 21: Planning Process	Tonnes of MSW managed at different hierarchy levels, including trends to show performance improvement: • Arisings • recycled/composted Waste transport: • Vehicle movements • Tonne-km travelled Report on levels of participation in reuse and recycling schemes, by type of scheme
Policy 22: Strategic Alignment	No specific indicators
Policy 23: Transport	Waste transport: • Vehicle movements • Tonne-km travelled
Policy 24: Other Waste Streams	Tonnes of other waste streams managed at different hierarchy levels, including trends to show performance improvement: • Arisings • reuse • recycled/composted • sent for treatment • used to recover energy • disposed to landfill

Annex A

Consultation Comments on Scoping Report and Response

Table A.1 Scoping Report Comments and Response

Section of Report	Comment	Response
Natural England		
Section 4 SA objectives	Do not highlight biodiversity, fauna, flora, soil, water and air as topics requiring SEA	Agreed – now noted in scoping report
	Low priority ranking of natural resources, landscape and biodiversity is not supported	Agreed. Concept of ranking removed.
	Decision-aiding questions might be useful	Noted
Appendix 3 Review of PPPs	Omits Birds and Habitats Directives and NERC2006	Added to review
	Review of PPS9 omits key planning principles on conservation and enhancement of biodiversity and geodiversity	Agreed. Added to review
Appendix 4 Key Issues	No sources given for data	Sources for baseline data are given in Appendix 5.
	State of Natural Environment 2008 Report may be useful for informing SA	Noted
Environment Agency		
Appendix 3 Review of PPPs	Omits: • Worcs CC generic SA framework • SA of LDF Joint Core Strategy • SA of Herefordshire LDF	Identified documents do not set the policy framework which is the purpose of Appendix 3.
Section 2 Policy Review	Issue 17 should include flooding from surface run-off. A target of 30% compared to current run-off rates should be adopted.	Agreed. Added surface run-off to issue 17, but achievement of the suggested target is largely outside the scope of the JMWMS and its contribution impossible to quantify.
Section 4 SA Framework	Issue 18. SFRAs for Herefordshire and Worcestershire Core Strategies will provide useful data to inform the JMWMS.	SFRAs will inform sequential approach to development decisions. However JMWMS does not identify locations for development.
	Issue 18. Support inclusion of this issue as it is a critical restraint for specific sites. Note categorisation of different waste facility types for compatibility with different flood zones.	JMWMS does not identify locations for development. This is the role of the CS.
	Issue 1 should include minimising waste	Issue 1 includes prevention
	Issue 8 is supported. Risk assessments should be included in appraisal. Precautionary approach of PPS23 should be noted.	Noted
Appendix 3 Review of PPPs	Data should be available on number of new homes built to BREEAM level 3	Not useful as an indicator as wholly outside remit of JMWMS.
	Hectares of contaminated land remediated could be collected.	SA will not carry out new data collection, however it may recommend data collection as part of monitoring implementation of strategy.
Appendix 5	PPS25 sequential test requires choice of	JMWMS will not choose sites

Baseline	sites at lowest risk of flooding.	for waste development
	Error on p51 – zone 1 is at lowest risk of flooding	Corrected to refer to flood zone 3
Appendix 6 Framework	Issue 1. Commercial waste should also be targeted, including minimisation at source	Agreed. Commercial waste added to indicators and targets.
	Issue 2. Need for monitoring location of waste facilities in flood zones	Location of facilities is not within the remit of the JMWMS
	Issue 7. BREEAM domestic standards should be included	Household energy use is wholly outside the remit of JMWMS.
	Issue 8. Groundwater should be included	Groundwater is included in definition of water quality and in indicators.
	Issue 18. Need for monitoring location of waste facilities in flood zones	Location of facilities is not within the remit of the JMWMS
	Use term 'flood risk', not 'flood prone'	Agreed. Term changed to flood risk.
	Note SUDS is helpful in mitigating climate change and reducing flood risk	Noted.
Worcestershire Wildlife Trust		
Appendix 3 Review of PPPs	Omits Habitats Directive	Added to review
	PPS9 review should include requirement to enhance biodiversity	Added to review
Appendix 5 Baseline	Special Wildlife Sites should be monitored in addition to SSSIs	Data will be added to baseline, but SA is unlikely to recommend JMWMS monitors numbers of SWSs as location of facilities is outside its remit.
English Heritage		
Review of PPPs	European Landscape Convention and Heritage White Paper should be included	Added to review
Appendix 4 Key Issues	The historic environment is scored of neutral significance for waste. Recommend this is changed to low.	Agreed. Significance changed.
Appendix 4 Key Issues and Appendix 5 Baseline	Landscape theme has links to the historic environment in terms of historic character of landscape. Historic Landscape Characterisation study is available for Herefordshire but still in progress for Worcestershire.	This link is recognised in Appendix 4 under landscape theme. Data will be included if studies complete within timeframe of SA. Note that JMWMS will not identify locations for facilities.
	Page 46 should include national Buildings at Risk Register as well as local registers and be expanded to cover 'heritage at risk'. In July EH is launching a programme on heritage at risk.	Agreed. National register has been added and definition expanded to cover all heritage. Data on heritage at risk will be included if available within timeframe of SA.
Appendix 6 Framework	Issue 10, sub-objective should also refer to county historic landscape characterisation	Reference has been added to sub-objective.
	Issue 15 reworded to "To preserve and enhance sites, features, areas and settings of archaeological, architectural, historical and cultural heritage importance and seek high quality design in all new development"	Disagree. No discernible change in meaning, scope or clarity of objective.

	Issue 15, first indicator should be amended to "number of designated historic assets at risk"	Agreed. Indicator changed
	Issue 15, order of sub-objectives should be reversed	Order of sub-objectives does not indicate any relative priority or emphasis in the SA.
	Issue 16, historic environment should be referred to as a potential constraint on reuse of land and buildings	Agreed. Reference added to historic environment
Worcestershire PCT		
Appendix 4 Key Issues & Appendix 6 Framework	Changes in life expectancy is not a good indicator for waste management. Changes in asthma admission rates and self-reported good health may be more sensitive/timely but again would be difficult to attribute change to waste management.	Life expectancy removed as an indicator.
Herefordshire Nature Trust		
Review of PPPs	Habitats Directive not included	Directive has been added to PPP review.
General	Efforts should be made to avoid damage to or decline in Special Wildlife Sites resource	Appraisal framework has an objective to conserve and enhance biodiversity. This will cover SWSs as well as other types of designations and non-designated assets.
	National Indicator 197 has been adopted by the Herefordshire LSP. This should be identified and factored into the waste plan.	Agreed, but note that data is not yet available. May be recommended as an indicator for the future.
	The plan talks of mitigation but not enhancement. This should be factored in also.	Appraisal framework has an objective to conserve and enhance biodiversity. JMWMS will be tested against this policy objective.

Annex B

Compatibility of Principles and Appraisal Objectives

As recommended by government guidance, the principles of the draft Headline Strategy have been tested against the appraisal objectives to ensure compatibility with sustainable development objectives.

The strategic principles are set out in *Table B.1* and the results of the compatibility test in *Table B.2*.

Table B.1 Summary of Principles

Principle One	Meeting the challenge of climate change by viewing waste as a resource
Principle Two	Commitment to the waste hierarchy of which waste prevention is the top
Principle Three	Influencing Government, waste producers and the wider community
Principle Four	Continued commitment to re-use, recycling and composting
Principle Five	Minimising the use of landfill
Principle Six	Partnership
Principle Seven	Monitoring and review
Principle Eight	Customer focus
Principle Nine	Value for money
Principle Ten	Consideration of social, environmental and economic impacts

Table B.2 Assessment of Strategic Objectives against SEA Objectives

Key:
✓ Positive compatible
× Possible conflict
? Uncertain
Ø Neutral

Objectives	Principles										Comments
	1	2	3	4	5	6	7	8	9	10	
1. Waste											
Manage the waste streams in accordance with the waste hierarchy, encouraging reuse and recovery addressing waste as a resource	✓	✓	✓	✓	✓	Ø	Ø	✓	Ø	Ø	
To minimise the production of waste generated	✓	✓	✓	Ø	Ø	Ø	Ø	✓	Ø	Ø	
2. Climate Change											
Reduce causes of and adapt to the impacts of climate change	✓	✓	✓	✓	✓	Ø	Ø	✓	Ø	?	Principle 10 states that environmental impacts will be considered together with social and economic impacts. The effect of this on greenhouse gas emissions is unclear.
Minimise biodegradable waste going to landfill	✓	✓	✓	✓	✓	Ø	Ø	✓	Ø	Ø	
Maximise opportunities to generate power from methane at landfill sites	?	×	?	×	×	Ø	Ø	✓	Ø	Ø	Diversion of biodegradable waste from landfill will reduce opportunities, but diversion should not therefore be avoided.
3. Traffic & Transport											
To reduce the need to travel and move towards more sustainable travel patterns	?	✓	?	?	?	Ø	Ø	Ø	Ø	?	Transport will be reduced by minimisation but may increase with greater recycling and if waste is exported for treatment. Considering environmental impacts may or may not result in reduction of waste transport. Issue will be examined in more detail in the policies although the transport policy is yet to be drafted.
Ensure the disposal of waste as close to point of origin as practicable and promote transfer of waste by rail or water transport where appropriate	?	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Exporting waste will not ensure its disposal close to its origin although environmental soundness will be taken into account and this should include consideration of transport impacts. Issue is examined in more detail in the residual options appraisal. Considering environmental impacts may or may not result in reduction of waste transport. Issue will be examined in more detail in the policies although the transport policy is yet to be drafted.
4. Growth with prosperity for all											
Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all	Ø	Ø	Ø	Ø	Ø	✓	Ø	Ø	Ø	Ø	

Objectives	Principles										Comments
	1	2	3	4	5	6	7	8	9	10	
have access to the benefits urban and rural											
To encourage business development within the waste sector to achieve Government targets for waste	Ø	Ø	Ø	?	Ø	✓	Ø	Ø	Ø	Ø	Aiming to achieve targets may indirectly encourage development of the waste sector in order to achieve the targets.
To encourage rural regeneration	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	
5. Participation by all											
To provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhoods and quality of life, encouraging pride and social responsibility in the local community	Ø	✓	✓	Ø	Ø	Ø	Ø	?	Ø	Ø	Designing systems around customers in order to meet their needs may involve their participation in decisions, although this is largely outside the remit of the JMWMS.
To provide opportunities for communities to participate in and contribute to waste planning decisions	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	Ø	Ø	
6. Technology, innovation & inward investment											
Promote and support the development of new technologies of high value and low impact, especially resource efficient technologies and environmental technology initiatives	?	Ø	✓	✓	✓	✓	✓	Ø	Ø	Ø	Greater resource efficiency through improved waste management practices may indirectly help to promote the development of new technologies.
To make an economic gain from the recovery and treatment of waste streams wherever this is environmentally acceptable	✓	Ø	Ø	✓	✓	Ø	Ø	?	✓	✓	Seeking to deliver services at an affordable cost may indirectly help to promote economic gain from waste management where possible.
7. Energy											
Promoting energy efficiency and energy generated from renewable energy and low carbon sources	?	✓	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Implementing the waste hierarchy may result in energy recovery, but this is not explicitly sought.
In accordance with waste hierarchy support the generation of energy from waste	?	✓	Ø	Ø	?	Ø	Ø	Ø	Ø	?	
8. Natural resources											
Protect and improve standards of air, water and soil quality ensuring prudent use of natural resources	✓	✓	✓	✓	✓	Ø	Ø	Ø	Ø	?	Environmental impacts will be considered holistically with economic and social impacts, which may or may not improve environmental quality.
Minimise the creation of dust, odour and noise and other pollutants in the vicinity of waste station / facilities	?	✓	Ø	Ø	✓	Ø	Ø	Ø	Ø	?	Environmental impacts will be considered holistically with economic and social impacts, which may or may not reduce emissions from facilities.
9. Access to services											
To improve the quality of and equitable access to local services and facilities, regardless of age, gender, ethnicity, disability, socioeconomic status or educational attainment	Ø	✓	?	?	Ø	Ø	Ø	✓	Ø	Ø	Aiming for increased recycling and composting should promote better access to services, although this is not explicitly sought.

Objectives	Principles										Comments
	1	2	3	4	5	6	7	8	9	10	
To improve accessibility to kerbside recycling and Household Waste Sites	Ø	✓	?	?	Ø	Ø	Ø	✓	Ø	Ø	
10. Landscape											
Safeguard and strengthen landscape character and quality	?	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	Environmental impacts will be considered holistically with economic and social impacts, which may or may not safeguard landscapes, although this is largely within the remit of planning and development control.
Encourage design that reduces visual intrusion and is sensitive to the local vernacular, as defined by the county landscape character assessment, county historic landscape characterisation and conservation area appraisals	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Design issues are normally beyond the scope of principles for a MWMS.
11. Biodiversity / Geodiversity / Flora / Fauna											
To conserve and enhance biodiversity and geodiversity	?	Ø	?	Ø	?	Ø	Ø	Ø	Ø	?	Increasing minimisation, recycling and composting may indirectly help to reduce pressures on biodiversity and geodiversity. Environmental impacts will be considered which may or may not ensure conservation and enhancement of biodiversity and geodiversity.
To assist in meeting Biodiversity Action Plan targets during the lifetime of the JMWMS	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	BAP targets are normally beyond the scope of principles for a MWMS.
12. Health											
To improve the health and well being of the population and reduce inequalities in health	✓	✓	Ø	✓	✓	Ø	Ø	Ø	Ø	?	Environmental and social impacts will be considered holistically with economic impacts, which may or may not help to improve health. Reduction of landfill through increased minimisation and recovery will help to minimise a potential source of health impacts.
To limit environmental impacts of waste treatment facilities on the local population including pest species at landfill sites	✓	✓	Ø	✓	✓	Ø	Ø	Ø	Ø	?	
To reduce respiratory diseases/allergy related illness	?	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	Ø	Increased recovery has an uncertain effect on emissions and health. This is examined in more detail in the options appraisal.
13. Provision of housing											
Provide decent affordable housing for all, of all the right quality and tenure and for local needs, in clean, safe and pleasant local environments	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Outside the remit of the JMWMS
Encourage the use of sustainable building technologies in new housing developments in particular the re-use of construction and demolition waste	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Outside the remit of the JMWMS

Objectives	Principles										Comments
	1	2	3	4	5	6	7	8	9	10	
Promote the provision of recycling facilities within new housing developments	Ø	Ø	Ø	?	Ø	Ø	Ø	?	Ø	Ø	Increased recycling and ensuring services meet customer needs may indirectly help to promote the provision of facilities in new housing developments, but this is not inevitable.
14. Learning and skills											
To raise the skills level and qualifications of the workforce	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	Considering the business case in waste management may indirectly help to promote better workforce skills/qualifications, but this is not certain.
To encourage engagement in community/environmentally responsible activities	Ø	✓	✓	✓	Ø	✓	✓	✓	Ø	Ø	
15. Cultural heritage, architecture and archaeology											
Conserve and enhance the architecture, cultural and historic environment heritage and seek well designed, resource efficient, high quality built environment in new development proposals	?	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Considering environmental impacts may or may not result in conservation of assets.
Promote design concepts for new buildings that are informed by the local vernacular	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Design issues are normally beyond the scope of principles for a MWMS.
The siting of new waste management facilities should not have a detrimental effect on the setting and *in situ* conservation of historic buildings, areas, landscapes or archaeological remains	?	Ø	Ø	Ø	✓	Ø	Ø	Ø	Ø	?	Considering environmental impacts may or may not result in conservation of assets.
16. Material assets											
Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, lands of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space, biodiversity interest or the historic environment	Ø	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Considering environmental impacts may or may not result in efficient use and conservation of land-based assets.
To support the reuse of construction materials	Ø	Ø	✓	Ø	Ø	Ø	Ø	Ø	Ø	Ø	
To protect land from contamination arising from waste	✓	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	
To restore landfill sites to amenity purposes.	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Outside the scope of the JMWMS
17. Crime											
Reduce crime, fear of crime and antisocial behaviour	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Ø	?	Increased awareness, customer focus and consideration of social impacts may indirectly help to reduce fly-tipping incidents,
Reduce the number of fly tipping incidents	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Ø	?	

Objectives	Principles										
	1	2	3	4	5	6	7	8	9	10	Comments
											although this is not explicitly sought.
18. Flooding											
Ensure inappropriate development does not occur in high risk flood areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas	Ø	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	?	Consideration of environmental, social and economic impacts and exporting where environmentally sound may indirectly help to avoid pressures to develop in flood risk areas, although this is not inevitable.
Ensure development does not occur in flood risk areas	Ø	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	?	

Annex C

Summary Assessment of Policies

Table B.1 Detailed Assessment of Policies

Key:

+	effect likely to be positive
-	effect likely to be negative
0	no significant effect
?	effect unknown
Ø	not relevant

	Not relevant
	No significance
	Medium significance
	High significance

Appraisal objectives	**Policies**																							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
1. Waste • Manage the waste streams in accordance with the waste hierarchy, encouraging reuse and recovery addressing waste as a resource • To minimise the production of waste generated	+	Ø	+	+	+	Ø	Ø	+	+	+	+	+	+	+	+	+	+	+	Ø	+	+	Ø	Ø	+
2. Climate Change • Reduce causes of and adapt to the impacts of climate change • Minimise biodegradable waste going to landfill • Maximise opportunities to generate power from methane at landfill sites	+	Ø	+	+	+	Ø	+	+	+	+	+	+	+	+	+	+	+	+	Ø	+	+	Ø	+	+
3. Traffic & Transport • To reduce the need to travel and move towards more sustainable travel patterns • Ensure the disposal of waste as close to point of origin as practicable and promote transfer of waste by rail or water transport where appropriate	?	Ø	?	?	0	Ø	+	?	+	+	+	0	?	?	?	?	?	?	Ø	?	?	Ø	+	?
4. Growth with prosperity for all • Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all have access to the benefits urban and rural • To encourage business development within the waste sector to achieve Government targets for waste • To encourage rural regeneration	+	Ø	+	+	+	Ø	Ø	+	0	0	0	+	+	0	+	+	+	+	Ø	?	Ø	Ø	0	0

Appraisal objectives	Policies																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5. Participation by all • To provide opportunities for communities to participate in and contribute to the decisions that affect their neighbourhoods and quality of life, encouraging pride and social responsibility in the local community • To provide opportunities for communities to participate in and contribute to waste planning decisions	0	Ø	?	0	Ø	+	Ø	0	0	0	0	Ø	0	Ø	Ø	Ø	Ø	0	Ø	Ø	Ø	Ø	0	0
6. Technology, innovation & inward investment • Promote and support the development of new technologies of high value and low impact, especially resource efficient technologies and environmental technology initiatives • To make an economic gain from the recovery and treatment of waste streams wherever this is environmentally acceptable	+	+	+	+	+	Ø	Ø	+	0	0	+	0	+	+	+	+	+	+	Ø	?	0	Ø	0	+
7. Energy • Promoting energy efficiency and energy generated from renewable energy and low carbon sources • In accordance with waste hierarchy support the generation of energy from waste	+/?	Ø	0	0	0	Ø	?	0	+	+	+	0	?	0	0	?	?	Ø	Ø	Ø	Ø	Ø	+	?
8. Natural resources • Protect and improve standards of air, water and soil quality ensuring prudent use of natural resources • Minimise the creation of dust, odour and noise and other pollutants in the vicinity of waste station / facilities	+	Ø	+	+	+	Ø	Ø	+	+	+	+	+	+	+	+	+/?	+/?	+	Ø	+	+	Ø	+	+
9. Access to services • To improve the quality of and equitable access to local services and facilities, regardless of age, gender, ethnicity, disability, socioeconomic status or educational attainment • To improve accessibility to kerbside recycling and Household Waste Sites	+	Ø	+	+	Ø	Ø	Ø	+/?	+	Ø	Ø	+	+	+	+	Ø	+	+/?	Ø	+	+	Ø	0	0
10. Landscape • Safeguard and strengthen landscape character and quality	?	Ø	Ø	?	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	0	0	?	?	Ø	Ø	Ø	Ø	Ø	0	0

Appraisal objectives	Policies																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
• Encourage design that reduces visual intrusion and is sensitive to the local vernacular, as defined by the county landscape character assessment, county historic landscape characterisation and conservation area appraisals																								
11. Biodiversity / Geodiversity / Flora / Fauna • To conserve and enhance biodiversity and geodiversity • To assist in meeting Biodiversity Action Plan targets during the lifetime of the JMWMS	+/?	Ø	Ø	+/?	Ø	Ø	+	Ø	Ø	+	0	Ø	+/?	Ø	Ø	+/?	+/?	Ø	Ø	Ø	Ø	Ø	0	0
12. Health • To improve the health and well being of the population and reduce inequalities in health • To limit environmental impacts of waste treatment facilities on the local population including pest species at landfill sites • To reduce respiratory diseases/allergy related illness	+	Ø	Ø	+	Ø	Ø	Ø	+	+	+	0	0	+/0	0	0	+	+	0	Ø	0	0	Ø	+	+
13. Provision of housing • Provide decent affordable housing for all, of all the right quality and tenure and for local needs, in clean, safe and pleasant local environments • Encourage the use of sustainable building technologies in new housing developments in particular the re-use of construction and demolition waste • Promote the provision of recycling facilities within new housing developments	Ø	Ø	Ø	Ø	Ø	Ø	Ø	0	Ø	0	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	Ø	Ø	+	Ø	Ø	Ø
14. Population 1 (Learning and skills) • To raise the skills level and qualifications of the workforce • To encourage engagement in community/environmentally responsible activities	+	Ø	+	+	+	Ø	Ø	+	+	+	Ø	+	+	+	+	+	+	+	+	+	+	Ø	Ø	0

Appraisal objectives	Policies																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
15. Cultural Heritage, architecture and archaeology • Conserve and enhance the architecture, cultural and historic environment heritage and seek well designed, resource efficient, high quality built environment in new development proposals • Promote design concepts for new buildings that are informed by the local vernacular • The siting of new waste management facilities should not have a detrimental effect on the setting and in-situ conservation of historic buildings, areas, landscapes or archaeological remains	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	?	0	?	?	Ø	Ø	Ø	Ø	Ø	Ø	Ø
16. Material Assets • Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, lands of green belt value, maximising use of previously developed land and reuse of vacant buildings, where this is not detrimental to open space, biodiversity interest or the historic environment • To support the reuse of construction materials • To protect land from contamination arising from waste • To restore landfill sites to amenity purposes.	Ø	Ø	Ø	Ø	?	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	+	Ø	Ø	Ø	Ø	Ø	Ø	Ø
17. Population 2 (Anti social behaviour, crime, litter and graffiti) • Reduce crime, fear of crime and antisocial behaviour • Reduce the number of fly tipping incidents	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	Ø	Ø	Ø	+	Ø	Ø	?	Ø	Ø	?	Ø	Ø	Ø	Ø	Ø	Ø
18. Flooding • Ensure inappropriate development does not occur in high risk flood areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas • Ensure development does not occur in flood risk areas	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	?	?	Ø	Ø	Ø	Ø	Ø	Ø	Ø